SUMTER COUNTY BOARD OF COUNTY COMMISIONERS

Local Mitigation Strategy

June 2015

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Record of Changes

The Local Mitigation Strategy Working Group (LMS WG) coordinates the development and maintenance of this plan. The LMS WG shall review the plan and mitigation project list annually and make any changes necessary as well as communicate those changes. This may include evaluation of any mitigation actions needed following an incident. After the Federal Emergency Management Agency (FEMA) approves this plan, the LMS Working Group will review and update the plan every five years.

Change Number	Change or Revision	Date

Summary of Changes

This version of the Sumter County Local Mitigation Strategy (LMS) is a total revision of the current 2010 plan. The Hazard Identification Risk Assessment (HIRA) has been further developed for this plan.

LETTER OF PROMULGATION

This letter promulgates the Sumter County Local Mitigation Strategy (LMS) and constitutes the adoption of the plan.

The LMS establishes the organizational and procedural framework to develop a continual process for the mitigation of hazards as a daily routine and to take a proactive approach to mitigation and the education of the benefits of mitigation long term. The LMS exists to promote and strengthen our community's ability to prepare for and recover from natural and human-caused disaster events.

This plan identifies and analyzes hazards and determines Sumter County's level of vulnerability to those hazards. The LMS Working Group will define and establish the actions necessary to decrease the impact of disasters on life, property, the economy, and the environment. This plan outlines the varied funding sources for all mitigation activities that are identified and prioritized in the LMS by the LMS Working Group. Within this plan are the bylaws that organize and provide the methodology for the LMS Working Group.

The Sumter County Board of County Commissioners gives its full support to this plan and urges all officials, employees, and citizens to do their part in the total emergency preparedness effort.

_____ _____

Chairman Date
Sumter County Board of County Commissioners

1. Introduction

Sumter County is vulnerable to a variety of hazards such as hurricanes, tornados, flooding, and wildfires that could affect its social, structural, environmental, and economic well-being. These hazards threaten the life and safety of county residents. They have the potential to damage or destroy both public and private property, and disrupt the local economy and overall quality of life of individuals who live, work, and vacation in the community.

It is the goal of the Sumter County Board of County Commissioners, its municipalities, and various public and private sector stakeholders to work collectively to mitigate the potential impacts of all hazards that threaten the community's life, property, and economy. The concept and practice of reducing risk to people and property from known hazards is known as hazard mitigation. Hazard mitigation is most effective when based on an inclusive, comprehensive, and long-term plan that is developed before a disaster occurs.

2. Purpose

The primary purpose of the LMS is to develop a continual process for the mitigation of hazards as a daily routine; and to take a proactive approach to mitigation and the education of the benefits of mitigation long term. Through the LMS process, the jurisdictions and partners assessed Sumter County's vulnerability to all hazards. They identified and prioritized planning and project goals and objectives that would mitigate the impacts of those hazards on the community.

The LMS exists to meet the 44 CFR 201 & 206 requirements to promote and strengthen our community's ability to prepare for and recover from natural and human-caused disasters and to remain eligible for mitigation grant funding opportunities. It accomplishes this through enhancing public awareness and understanding, facilitating a whole community approach to make mitigation a priority, and establishes a methodology for managing mitigation efforts/projects.

3. Scope

The LMS Working Group developed this plan for all of Sumter County and its participating municipalities and districts as identified in the document. Any part or section of the plan may be modified or revised as participation expands or decreases.

The LMS's scope

- Protect the health, safety, and welfare of the public
- Inform and educate the public about potential hazards and property protection measures
- Minimize the effects of hazardous materials incidents
- Reduce the cost of disaster response and recovery

- Encourage the protection of natural resources
- Storm water improvement
- Reduce property damage caused by flooding
- Prioritize the construction or enhancement of the critical facilities and infrastructure
- Minimize the effects of pandemic influenza and other diseases

4. Planning Assumptions and Considerations

- The LMS is a multi-jurisdictional effort
- Sumter County Emergency Management is the motivating and initiating force of the LMS, with full support from all of its local jurisdictions
- The LMS has no regulatory authority
- The LMS is not a capital improvement committee or funding source
- The LMS has not been commissioned by the Board of County Commissioners (BOCC)
- The LMS has no budget
- The LMS supports, coordinates, and prioritizes mitigation project applications for potential grant program funding consideration
- The LMS does not approve implementation and funding of projects
    - Projects that receive grant-funding approval are sent before the respective governing bodies for review and approval of funds and project implementation through the sponsoring department or agency
- The LMS acts as a local coordination committee that supports and recommends projects for various grant programs
    - Recommends to other regulating agencies or organizations things they can do to better mitigate our community against natural disasters, and provide educational outreach to the general public about ways they can prepare their families, and mitigate their homes and businesses

5. Authorities and References

Below are common references and authorities applicable to this plan:

5.1 Laws and Ordinances

Sumter County Code

- Chapter 5, Boats, Docks, and Waterways
- Chapter 8, Emergency Services
- Chapter 9, Floodplain Management
- Chapter 13, Land Development
- Chapter 20, Roads and Bridges

State Statutes

- Chapter 252, State Emergency Management Act

Federal Laws

- Flood Disaster Protection Act of 1973
- The Robert T Stafford Disaster Relief and Emergency Assistance Act
- Disaster Mitigation Act of 2000
- Post-Katrina Emergency Management Reform Act of 2006
- Sandy Recovery Improvement Act of 2013
- Emergency Planning and Community Right-to-Know Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- The Biggert-Waters Flood Insurance Reform Act of 2012
- National Historic Preservation Act

5.2 Administrative Rules

State of Florida

- Chapter 27P-2: Florida Administrative Rules: Comprehensive Emergency Management Plan
- Chapter 27P-22, Florida Administrative Rules: Hazard Mitigation Grant Program

Federal

- Title 44 CFR, Emergency Management and Assistance

5.3 Emergency Operations Plans and Procedures

Sumter County

- Sumter County Floodplain Management Plan
- Sumter County Wildfire Protection Plan
- Sumter County Post-Disaster Redevelopment Plan
- Sumter County Shelter Plan
- Comprehensive Emergency Management Plan (CEMP)
- Sumter County Comprehensive Plan

State

- State of Florida's Comprehensive Emergency Management Plan
- Enhanced Hazard Mitigation Plan
- Statewide Emergency Shelter Plan

Federal

- National Response Framework

6. LMS Working Group (LMS WG)

The Sumter County LMS Working Group has adopted bylaws to establish its purpose and responsibility, to create a structure for the organization, and to establish the other fundamental characteristics of the LMS WG as a community service organization.

6.1 By-Laws

Purpose of the LMS Working Group
The purpose of the LMS Working Group is to oversee and to coordinate all mitigation activities within the County. The Working Group develops and revises the LMS Plan and sets an order of priority for local mitigation projects. To be eligible for state and federal hazard mitigation grant funds, the County must establish a Local Mitigation Strategy Working Group (LMS WG), which includes local municipalities.

Membership
Participation in the LMS Working Group is voluntary. Membership is open to all jurisdictions, county government, private and civic organizations, property owners associations, state agencies, independent special districts, and non-profit organizations supporting mitigation efforts.

The Working Group shall consist of designated representatives of:

A. Sumter County Board of County Commissioners, City of Wildwood, City of Bushnell, City of Coleman, City of Webster, City of Center Hill, The Villages Community Development Districts, and the Sumter County School District.

B. Membership is also extended to representation from interested private organizations, civic organizations, trade and commercial support groups, property owners associations, authorized tribal organizations, water management districts, regional planning councils, independent special districts, and non-profit organizations.

C. Jurisdictions will appoint their members by an official letter, on letterhead, signed by the managing executive. Each participating organization must provide a name and contact information, and maintain any revisions of the regular and alternate members of the LMS Working Group.

Organizational Structure

Officers
The organizational structure shall consist of a Chairperson and Vice Chairperson. The Director of the Sumter County Emergency Management Department will be the Chairperson and the majority vote of the voting members will elect the Vice Chairperson. The Chairperson may appoint additional officers, as needed. Any voting member, or alternate, in good standing as described in Article II, is eligible for election as an officer. The Chairperson will declare meetings, prepare agendas, and preside over each meeting. Additionally, the Chairperson may establish permanent or temporary Committees, when necessary, and assign personnel to them.
The Vice Chairperson will fulfill the duties and responsibilities of the Chairperson, in his or her absence. The Vice Chairperson will serve a term of one calendar year, beginning January through December, and will be eligible for re-election. Elections for Vice Chairman shall occur during the last quarter meeting of each calendar year. The Chairman will receive nominations prior to and from the floor during the last meeting. The membership will choose the Vice Chairman by simple majority.

Committees
The LMS Working Group and the Chairperson may establish a permanent or temporary committee and their members at any time for special purposes. All members of the committee(s) may vote regardless of their jurisdiction or organizational membership. Examples of committees include but are not limited to:

- Project Ranking Committee
- Local Mitigation Strategy Planning Committee
- Mitigation Funding Committee

The LMS Working Group may dissolve any standing committee by an affirmative, two-thirds majority vote of the members present at the time of the vote. At the time of dissolution, the Sumter County Emergency Management Director shall take possession of all remaining documents, records, and supplies belonging to the committee and maintain them according to state and federal information management guidelines.

Staffing
The Sumter County Emergency Management Department provides staff support to the LMS Working Group and its committees. This support shall include technical and clerical support.

Responsibilities
All responsibilities of the LMS Working Group shall be as specified by Chapter 27P-22.004 and 27P-22.005 F.A.C. These rules are authorized under Chapter 252, F.S.

The LMS Working Group is responsible for overseeing and coordinating all actions and decisions by each Committee formed, and is solely responsible for formal actions in the name of the Committee, including the release of reports, development of resolutions,

issuance of position papers and similar activities. The LMS Working Group makes assignments to the committees, coordinates their tasks, and takes action on their recommendations. All duties described above are within the supervision of the LMS Working Group Chairperson.

The Chairperson shall:

- Set the meeting agenda and conduct Working Group meetings
- Ensure meeting minutes are drafted and distributed to the working group members
- Maintain working group and committee files and records
- Oversee mitigation planning
- Submits the Annual Progress Report to the Florida Division of Emergency Management
- Notifies the public of meetings and provides public outreach on mitigation activities

The Vice-Chairperson shall fulfill the roles and responsibilities of the chairperson in his/her absence.

Planning
The Working Group ensures that a LMS Plan is developed and revised. Planning responsibilities include identifying and analyzing hazards, as well as determining Sumter County's level of vulnerability to each threat. Additionally, the Working Group will define structural and non-structural actions needed to decrease the impact of disasters on individuals, the economy, and the environment. It will also identify potential funding sources for all priority mitigation initiatives identified in the mitigation strategy.

Public Participation
The LMS Working Group will encourage public participation. Sumter County Emergency Management staff will inform the public about the LMS Working Group's activities through local newspapers and the Sumter County website.

Actions by the LMS Working Group

Authority of Actions
The LMS Working Group voting members have final authority regarding decisions and or actions to the LMS, including adoption of recommendations from any or all committee groups.

Meetings, Voting and Quorum
LMS Working Group regular meetings will be scheduled at least three times per year, with a minimum of ten-business days' notice. Committees, assigned by the LMS Working Group, will meet as necessary.

LMS Working Group and committee meetings will be conducted in accordance with basic Robert's Rules of Order.

Each governmental body or jurisdiction must adopt the most recent LMS Plan by resolution or ordinance before being eligible to vote. Either a primary or an alternate representative from each entity must have attended at least three LMS Working Group or committee meetings within the preceding twenty-four months to be eligible to vote.

Each voting member in good standing is allowed to cast one vote. The voting member shall vote at the time of voting. The voting member may vote in-person, through interactive tele-conferencing, or via internet conferencing. Proxy voting is not allowed; however, each may designate up to two alternate representatives, one of which may vote in the absence of the regular voting representative. A simple majority of the voting representatives present shall decide each issue requiring a vote.

The Chairperson, or the Vice Chairperson, in his or her absence, will not be a general voting member. The Chairperson or Vice Chairperson will only cast a vote to break a tie vote.

Special meetings
The Chairperson, or the Vice Chairperson, in his absence, may convene the Working Group under certain situations when items become time-sensitive, between regularly scheduled meetings. These circumstances may include short-notice mitigation funding opportunities, project additions, and special presentations.

Public Meetings
All regular LMS Working Group meetings are open to the public, and will be advertised as public meetings, in accordance with the Board of County Commissioners' policies. The public shall be afforded time for public input as part of the meeting agenda. The LMS Working Group shall also provide opportunities for the public to comment on the LMS Plan during the drafting stage and prior to plan approval.

Documentation of Actions
All meeting minutes and other forms of action by the LMS Working Group and any committees shall be documented and made available for inspection by the public as provided by Chapter 119, F.S.

An Emergency Management staff member will record the meeting and draft the meeting minutes. The Chairperson shall distribute the draft minutes to the working group members within thirty (30) business days of the meeting. The LMS Working Group members shall approve the meeting minutes at the following scheduled meeting.

Adoption of and Amendments to the By-Laws

Two-thirds of the voting members present during a regular meeting may vote to amend and/or adopt the LMS Working Group By-laws. The Chairman shall provide all proposed amendments to the By-laws to each member not less than ten (10) business days prior to a vote.

6.2 LMS Working Group (LMS WG) Goals and Participation

Goals of the LMS WG

- Analyze to what level the LMS currently functions as opposed to where the LMS needs to grow and expand to not only meet the new FEMA requirements of 44 CFR Part 201 & 206, but also to enhance Community Rating System (CRS) activities
- Develop the organizational structure of the LMS
- Identify potential LMS technical support to bring the LMS document into compliance
- Identify goals and objectives
- Identify all hazards that could impact Sumter County and it's jurisdictions.
- Review and update Goals and Objectives
- Provide Technical Assistance

Participation

Public and private sector coordination is vital for the long-term success of hazard mitigation. Increased educational awareness of the need for and importance of hazard mitigation can help to encourage participation in the over all preparedness efforts of Sumter County.

Multijurisdictional Participation

In addition to Sumter County Emergency Management, the cities of Wildwood, Coleman, Webster, Bushnell, Center Hill, and The Villages Community Development District's Public Safety representative participated in the LMS planning effort. Each jurisdiction participated in the development of the plan to include review for and approval of information about their respective jurisdictions. They provided information and insight into the project prioritization within their own communities as well as the county as a whole. Each adopted the plan for their jurisdiction.

Individual representatives from the different local government agencies are also invited by email to participate in mitigation planning, and to attend and participate in each of the meetings. These representatives include Fire & EMS, Public Works, Development Services, Economic Development, Law Enforcement, Communications, Information Technology, and the Chamber of Commerce.

State agencies invited to participate include Florida Forestry Service, South West Florida Water Management District (SWFWMD), Florida Division of Emergency Management (FDEM), and the Department of Health.

The Emergency Management Director also announces upcoming LMS WG meetings at the quarterly regional emergency management meetings as an invitation for those interested.

Federal Agencies invited to participate include the Coleman Correctional Facility, the National Weather Service (NWS), and the Army Corp of Engineers (ACES).

Public Participation
Open public involvement is essential to the development of an effective plan. Coordination and partnership among the governmental units involved in the planning effort is essential in the mitigation planning process.

The LMS WG sought and encouraged public participation during the planning process. The Emergency Management Department advertised the LMS Working Group meetings in *The Villages Daily Sun* prior to each meeting. Representatives from the public were offered time to discuss all aspects of the planning process including the plan and project list. Some of the public participants include Dan Defranco, Anita Graner, and Joe Elliott from The Villages; Other Interested Parties (OIPs) included Andy Cripps from the Sumter County Chamber of Commerce, Darlene Baney, a volunteer for the American Red Cross and the Medical Reserve Core.

Emergency Management staff members frequently provide hazard mitigation education through outreach programs such as **The Villages Hurricane Expo** and presentations to homeowner or business groups prior to the annual hurricane season. These efforts are designed to encourage home and business owners to prepare in advance of each hurricane season and will continue. Other examples of outreach and education that Emergency Management offers include:

- Public Meetings
- Government Day
- Public Presentations at local libraries for Severe Weather Awareness Week
- Weather Radio Programming events at local businesses
- Website Feedback

6.3 LMS Working Group Meetings

The LMS WG will meet a minimum three times a year on the third Thursday of April, August, and December. Additional Board meetings may be scheduled or other adjustments made at the discretion of the members. The December quarterly meeting is of particular importance. It is the meeting the LMS WG elects the Vice Chairperson for the New Year, allows for the review and discussion of the year's accomplishments, and to review the project list. The Chairman gathers and transmits this information to the State through the Annual Update Letter.

Emergency Management staff members draft the meeting minutes and distributes them to LMS WG members for review and approval. The staff members maintain attendance rosters and documents participation in the meeting minutes.

The Chairman invites each of the jurisdictional representatives, as well as, individual representatives from local, state, and federal agencies to the LMS meetings. Additionally, the County Administrator announces upcoming LMS meetings at the monthly joint meeting of City and County officials. The LMS participants and members are also encouraged to "spread the word" about the LMS and encourage participation by anyone and everyone interested.

For notification and invitation to the public, each LMS group meeting has had and will have a public notice in *The Villages Daily Sun*.

7. Planning Process

In August 2014, The Chairman informed the members of the Working Group that the group needed to update the LMS Plan to meet new mitigation criteria as outlined in the 2013 Florida State Hazard Mitigation Plan, as well as, the expiration of the plan's original FEMA approval in July 2015. He asked the members of the LMSWG and the public participants to review the LMS plan and project list for additions, changes, and determination of progress for projects underway and any completed projects. Simultaneously, Emergency Management staff members were tasked with updating the hazard and risk assessment section of the plan. Upon completion of all tasks, Emergency Management conducted a final review of the LMS Plan using the new criteria and verified the components against the required Mitigation Plan Review Checklist.

Emergency Management initiated the process of plan update by first informing the LMS WG of the purpose for updating the LMS plan and project list. Participation in review of the current 2010 plan was sought and highly encouraged between 2012 and 2015. Through the review process, the LMS Working Group determined there is a need for total revision and update of the document.

Emergency Management took the lead on compiling the data required for updating the Hazard Identification and Risk Assessment and assembling that information into a comprehensive format.

All participants engaged in the review of the project list and agreed to an update of the list and the prioritization methodology. In 2014, the Chairman presented to the WG a new, simplified method for prioritizing projects. The WG discussed the proposal and agreed to the new method, which is further discussed later in this document.

The group discussed potential mitigation categories and projects based on the identified community goals, objectives, and hazard vulnerabilities. Project owners updated existing projects and proposed new ones.

Once all of the readily available data and information was accumulated, Emergency Management staff members drafted the updated LMS plan, which the LMS WG

members reviewed, analyzed, and commented on. The EM staff members posted a copy of the draft plan on the Emergency Management website seeking public comment.

7.1 Adoption and Maintenance

The final LMS Plan draft was completed in June of 2015 and submitted to the State of Florida for review, comment, and approval. The plan will need to be periodically updated and reviewed by the LMS WG and each community's public participants, and ultimately approved by FEMA on a five-year cycle. There will be a schedule of future meetings provided later in this document after formal approval. Upon pre-approval of the plan, each of our jurisdictional governing bodies within the county were required to demonstrate their commitment in the LMS philosophies and mitigation efforts by adopting the LMS plan through resolution or ordinance.

Below is an all-inclusive list of the entities within Sumter County required to approve this LMS plan as a multi-jurisdictional plan. Participation will be identified by attendance and active participation in the process.

Table 1: Participating Jurisdictions

Jurisdiction Name	Jurisdiction Type	Representative Name	Representative Title	Representative Agency
Sumter County	County	David Casto	Emergency Management Director	Sumter County Board of County Commissioners
City of Bushnell	Municipality	Denise Lee	Director of Zoning and Code Compliance	City
City of Center Hill	Municipality	Dianne Lamb	City Clerk	City
City of Coleman	Municipality	Ruth Busby	Public Services Director	City
City of Webster	Municipality	Kelly Williams	Mayor	City
City of Wildwood	Municipality	Dianne Gibson-Smith	Human Resources Coordinator/ Risk Manager	City
The Villages Community Development Districts	Special District(s)	Gina Lambert/John Longacre	Emergency Management Specialist	The Villages Public Safety
Sumter County School District	School District	Jim Allen/Eric Suber	Facilities Director	Sumter County School Board

The entities listed above participated to the extent that they attended the meetings, participated, and contributed to the update process of gathering data, providing insight and information all in the effort to better mitigate our community.

7.2 Implementation and Integration

Implementation of the LMS will promote whole community well-being and decrease the impacts of disasters to the community by lessening human and economic costs. In adopting this plan, communities are proactively addressing vulnerability to hazards

before they occur. It is a systematic approach for better planning between Sumter County and its municipalities. The strategy identifies the programs and projects needed for more effective hazard mitigation. The LMS provides an approach to decision-making and guides redevelopment that can mitigate the impacts of future disasters.

Once the jurisdictions approve the 2015 revision, it will be integrated by reference into the Sumter County Comprehensive Emergency Management Plan, Floodplain Management Plan, and any other related community planning efforts such as the Community Rating System. The Emergency Management Department and Development Services Division will co-manage the integration process.

8. Mitigation

8.1 Mitigation Goals and Objectives

The LMS Working Group's commitment is to promote long-term mitigation planning to increase the community's resilience to the hazards identified in this plan. The group has identified specific goals and objectives that enable the LMS WG to reach and maintain this commitment. This plan revision outlines the group's main mitigation goals as:

Goal 1: Develop or continue to improve hazard mapping for Sumter County hazards
Goal 2: Clear and maintain the drainage of seven canals in the South Sumter Canal System
Goal 3: Improve the County's standing in the National Flood Insurance Program by moving from Community Rating System Class 7 to Class 6
Goal 4: Decrease water damage to county-maintained roads by paving older unpaved roads
Goal 5: Provide public information and education through outreach activities to the public concerning threats to life, property, and economy; and mitigation measures.

8.2 Mitigation Actions

This section identifies a comprehensive range of specific mitigation actions and projects for each hazard. Public education and outreach is a mitigation priority and can assist the residents on what hazards to be aware of and how to be prepared for these events. Emergency Management is typically the lead agency for disaster-related public education efforts in Sumter County.

Floods
One of the mitigation goals of Sumter County and it's municipalities is to mitigate the effects of flooding. Floods cause impacts such as property loss, damage to critical facilities, contaminated water sources, and the disruption of environmentally sensitive areas. Each municipality and the County's Development Services Division enforces the local codes and ordinances that focus on flood damage, prevention, and protection.

Mitigation efforts related to the County's repetitive loss properties are covered in detail in the Floodplain Management Plan (FMP).

Several initiatives serve to lessen the impacts of flooding. Canal cleaning, culvert enlargements, and two (2) watershed studies are all active examples of flood mitigation efforts. These mitigation activities are discussed in further detail later in this plan.

Hurricanes
Mitigation efforts against the impacts of hurricanes include Emergency Management's continual effort to conduct public education about steps that should be taken to mitigate homes and businesses such as wind retrofit projects. These types of projects could range from window and roof upgrades to replacement of entire buildings to meet Building Code Ordinance. The county built several new fire stations and upgraded others. The new stations were built to stricter building codes that protect against severe weather impacts, such as hurricane force winds, than those that were replaced.

Severe Storms, Tornadoes, and Lightning
Mitigation efforts against severe storms and tornadoes have included public outreach and education throughout each year to teach citizens about the dangers of severe weather. The difference in severe weather, particularly tornadoes, from season to season impacts communities in different ways and it is critical to make citizens aware of how they may be affected. Each year the State dedicates a week as Severe Weather Awareness Week. During this week, Sumter County Emergency Management conducts emergency preparedness presentations throughout the community to highlight the types of severe weather. These presentations also discuss mitigation measures homeowners and others can take to minimize losses.

Wildfire
Sumter County and the Florida Forestry Service worked in collaboration to develop the Sumter County Wildfire Protection Plan. This plan identifies wildfire occurrence rates, cause trends, and identifies the medium to high-risk communities within Sumter County. This information is analyzed to develop and prioritize hazardous fuel mitigation plans based on communities at risk. The LMS Chairman also participates in the annual Withlacoochee Wildfire Services Coordinating Council. The Florida Forestry Service conducts prescribed burns of several hundreds of acres in the Withlacoochee State Forest each year in an effort to reduce uncontrolled fires.

Extreme HeatDrought
Florida has experienced statewide drought conditions over the last several years (2011-2014) that range from abnormally dry to severe, 2011 experiencing the worst due to the hydrological drought conditions. Conditions have increasingly improved through out 2012-2014 from severe, to moderate, to abnormally dry. Currently in 2015, conditions are less severe with only a few areas experiencing abnormally dry periods. The main mitigation effort against drought is public education about the ways in which Sumter County's water resources can be preserved and sustained. The Southwest Florida

Water Management District (SWFMD) has imposed watering restrictions during periods of drought.

Sinkholes
Because of the karst make-up of much of Florida's topography, sinkholes can occur almost anywhere. Sumter County Emergency Management actively submits sinkhole occurrences to the Florida Geological Sinkhole Vulnerability Study. The study is a mapping project with the intention of locating patterns in sinkhole occurrence that can help predict future sinkhole activity.

Extreme Cold/Hard Freeze
Sumter County occasionally experiences cold weather that creates the conditions for frost or a light freeze. However, in the past, Sumter County has experienced hard freeze conditions that caused the loss of many different crops. The County's extension agent provides education to agricultural landowners to help them plan and prepare for the cold weather in order to protect themselves, their crops, and livestock.

Hazardous Materials
Mitigation of hazardous materials incidents includes techniques to reduce losses to emergency personnel, citizens, structures, and the environment. Sumter County is currently in the process of developing and training a Hazardous Materials Team that will provide a local response capability to hazardous material incidents. Training of first responders and other relative local government agencies has also been conducted informing on the basics of hazardous material incident response. In other mitigation efforts, some of the water treatment facilities in the County have converted their liquid chlorine based disinfection system to sodium hypochlorite eliminating the potential for a hazardous material accident.

8.3 Prioritization Methodology

The WG developed a simplified prioritization methodology. The WG members prioritized each project based on categorization and consensus from the group. The Working Group chose nine (9) categories that meet the mitigation goals of Sumter County. The categories selected are as follows and are in order of highest priority (1) to lowest priority (9).

1) Floodplain elevation and acquisition
2) Storm Water drainage mitigation
3) Lift station elevation
4) Lime rock road paving
5) Hardening and retrofit
6) Critical infrastructure facility protection and mitigation
7) Generators and UPS
8) Mitigation planning
9) Mitigation training, education, and public outreach

When a project is presented to the Working Group, it will be immediately placed in one of the (9) categories. Projects that do not fall into one of these categories will be placed at the bottom of the prioritized project list. However, the LMS WG members may elevate a project to a higher position on the project list in special situations, as they occur.

After each project is placed in its respective category, the Working Group further prioritizes them under each category. Each will receive a letter designation following the category numbers for which they are designated such that multiple projects in Category 1 shall be designated 1a, 1b and so forth. This prioritization method will be based on the Working Group's combined local knowledge, public input, and a cost benefit summary that shall be provided with each project at the time of application.

Once the projects have been prioritized by jurisdiction they will be combined into a final project list by majority vote of the voting members of the Working Group.

8.4 Mitigation Projects

The list of Hazard Mitigation Projects identifies the projects that can be funded through the various funding sources described in this plan. The availability of funding and the immediate priorities of the local government and municipalities will ultimately drive the selection of mitigation projects for grant application submittal.

Funding Sources
Table 2 provides a description of possible funding sources that may be used for mitigation projects. The description includes an overview of the types of assistance, funding sources, eligibility, and the availability cycle. The description is based upon information currently available and does not preclude the consideration of other funding sources that are not identified here. The WG recognized that jurisdictional general funds are always an option. However, any project identified in the project priority list with a General Fund reference means there is no funding match available at the time of this plan's development.

Table 2: Hazard Mitigation Funding Sources

Grant Name	Description	Funding Source	Eligible Applicants	Availability Cycle
Hazard Mitigation Grant Program (HMGP)	Provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration	FEMA	•State •Local governments •Private non-profit organizations *Individual homeowners and businesses may not apply directly to the program; however an eligible Applicant or Subapplicant may apply on their behalf	Post Disaster
Pre-Disaster Mitigation Grant (PDM)	Provides funds for hazard mitigation planning and	FEMA	State agencies; Federally recognized, local governments Private	Annual

	projects to reduce overall risk to people and structures, while at the same time, also reducing reliance on federal funding if an actual disaster were to occur		non-profit organizations are not eligible to apply; except through a local government application for proposed activities on their behalf	
Flood Mitigation Assistance Grant Program (FMA)	Provides funds for projects to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP) on an annual basis	FEMA	State agencies, participating NFIP communities, or qualified local organizations. Communities that have been suspended from the NFIP are not eligible	Annual
Repetitive Flood Claims Grant Program (RFC)	Provides funding to reduce or eliminate the long-term risk of flood damage to structures insured under the National Flood Insurance Program (NFIP) that have had one or more claim payments for flood damages	FEMA	State agencies, Local and Tribal Governments that participate in the NFIP communities and are in good standing	As needed
Severe Repetitive Loss Grant Program (SRL)	Provides funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss structures insured under the National Flood Insurance Program (NFIP)	FEMA	State agencies, local and tribal governments that participate in the NFIP communities and are in good standing	As needed
Community Development Block Grant (Disaster Recovery Assistance)	When major disasters occur, Congress may appropriate additional funding for the CDBG program as Disaster Recovery grants to rebuild the affected areas and bring crucial seed money to stimulate the recovery process.	Housing and Urban Development (HUD)	State agencies County Cities	Post Disaster
Hurricane	Funding to reduce	Florida	Local governments, school	Annual

Shelter Retrofit Program	the statewide shelter deficit	Division of Emergency Management (FDEM)	districts, private non-profit organizations (NGOs),	

Mitigation Project List:

The LMS WG revised the Mitigation Project List and reprioritized the projects based on the simplified methodology. The WG reviews the list each meeting and jurisdictions have an opportunity to add to the list with the approval of the WG. This approach streamlines the process and recognizes the applicant is responsible to complete any grant application including any cost-benefit analysis required for project submission.

Table 3. Sumter County Mitigation Project List

Project Title	Priority	Jurisdiction	Risk Mitigated	Funding Sources
Coleman Water Tank Elevation	1	City of Coleman	Flooding	DPM FMA HMGP
Sunset Park Drainage Improvements, Wildwood	2a	City of Wildwood	Flooding	DPM FMA HMGP CDBG
Pitt and Stone Street Drainage Improvements, Wildwood	2b	City of Wildwood	Flooding	DPM FMA HMGP CDBG
Market Street Drainage Improvements, Center Hill	2c	City of Center Hill	Flooding	DPM FMA HMGP CDBG
S.W. 3rd Street Drainage Improvements, Webster	2d	City of Webster	Flooding	DPM FMA HMGP CDBG
Bushnell Plaza Drainage Improvements	2e	City of Bushnell	Flooding	DPM FMA HMGP CDBG
County Health Department Shuttering (Wildwood & Bushnell)	5	City of Bushnell	High Winds	HMGP PDM
Coleman Critical Facilities Shuttering	5	City of Coleman	High Winds	HMGP PDM
The Villages Public Safety Station 40 Hardening	5	The Villages CDD	High Winds	HMGP PDM
Bushnell Community Center Uninterrupted Power Supply	7	City of Bushnell	Power Loss	General Fund

Bushnell Lift Station Uninterrupted Power Supply: 18 Lift Stations	7	City of Bushnell	Power Loss	General Fund

8.5 Monitoring and Evaluation

The LMS WG will measure the completion of mitigation projects and other mitigation actions that result in reductions in impacts to the community. The Chairperson will ask the members to review the plan prior to the December meeting and will ask for recommendations for revisions. Projects are also reviewed for completed actions. Members also have the opportunity to document additional mitigation successes not identified in the plan.

The third meeting also provides the WG members the opportunity to evaluate the effectiveness of the planning process. For example, the WG members found the project prioritization method used in the original 2008 LMS Plan was too complicated and did not yield many results. The result presented in this plan is a simplified, but negotiated, prioritization method that allows projects to be presented to the WG in a timely fashion without wasting staff time with complex estimations.

The below are examples of successful activities completed since the 2010 LMS Plan:

Gant Lake/Big Prairie Watershed Study
South West Florida Water Management District and Sumter County have collaboratively commissioned an engineering firm to conduct a watershed study analysis for Best Management Practices (BMPs). The study is a hydrologic and hydrodynamic modeling of the watershed, a structure inventory, and an alternatives analysis. The modeling result has lead to the revision and development of much more accurate 100-year floodplain maps, which more accurately shows flooding extents and identification of the 100-year Base Flood Elevations (BFEs). Sumter County submitted these revised maps to FEMA for a letter of map revision (LOMR).

Ditch/Canal Maintenance Program
The Sumter County Public Works Stormwater Branch implemented a ditch and canal-maintenance program in 2014. There are seven canals in the South Sumter Canal System. Canal “G” in the south canal system was the first canal to be cleaned followed by Canal C in 2015. One will be cleaned each year until all have been cleaned.

County Road 416
Public works cleaned the outfall ditch roughly from Panacoochee Estates to the outlet canal and upsized some undersized culverts. This project clearly prevented several homes from being flooded in June 2012 when Tropical Storm Debby dumped nearly fifteen inches of rain on the Estates. While some homes were damaged, the water was diverted away from several blocks of homes.

County Road 431 N
Public works cleaned out filled in ditches and re-installed driveway culverts for positive drainage to eliminate a residential flooding problem in Lake Panasoffkee.

Other Project Types
- New and rebuilt fire stations, upgraded fire station bay doors
- The construction of a new shelter adding more than 200 shelter spaces
- Purchase, installation, and implementation of 800 MHz communication system
- The un-pave to pave program

  Initially, there were 44 un-paved county roads in Sumter County. In 2013, the first year of the program, seven roads totaling six miles were paved. In year two, 2014, 22 roads at 5.92 miles were completed. In the third year, 2015, there are 15 roads equaling 6.02 miles that remain to be paved.

9. Relationship to Existing Planning Efforts

The Sumter County and participating jurisdiction's Local Mitigation Strategy is incorporated into existing planning mechanisms. Each of the following plans, processes, procedures, and ordinances are incorporated by reference to this Local Mitigation Strategy.

Development Review
The Central Permitting section of the Building department enforces the Building Code Ordinance. The code has specific criteria related to both wind and flood mitigation. At the point of permitting, enforcement of the Code supports the mitigation strategy.

Stormwater Management/Flood Plain Management
The Development Services Department manages the Floodplain Management Plan (FMP). The FMP is a broad planning document that focuses specifically on a mitigation strategy related to repetitive loss properties and flood mitigation in general throughout the entire County.

Sumter County and its municipalities participate in the National Flood Insurance Program (NFIP) and as described below, maintain their rating under the Community Rating System (CRS) through various programs. The NFIP was created to provide affordable flood insurance to people living in high-risk flood areas, also known as Special Flood Hazard Areas (SFHAs). The program is a self-sustaining program administered by a branch of FEMA. The program makes flood insurance available in communities that adopt and enforce floodplain management ordinances and regulations (NFIP Communities).

Communities that participate in the NFIP adopt and enforce floodplain management programs in order to reduce future flood damage. In exchange, the NFIP provides federally backed flood insurance for property owners and renters in the participating communities. In addition to providing flood insurance and reducing flood damage through floodplain management regulations, the NFIP identifies and maps the nation's floodplains.

The NFIP has been successful in requiring new buildings to be protected from damage by a 100-year flood. However, flood damage still results from more frequent, less intense, flooding episodes and from flooding in unmapped areas. Under the CRS, there is an incentive for communities to do more than just regulate construction of new buildings to minimum national standards.

The goal of the CRS is to encourage, by the use of flood insurance premium adjustments, community and State activities beyond those required by the NFIP to:

- Reduce flood losses
- Protect public health and safety,
- Reduce damage to buildings and contents,
- Prevent increases in flood damage from new construction,
- Reduce the risk of erosion damage,
- Protect natural and beneficial floodplain functions,
- Facilitate accurate insurance rating, and
- Promote the awareness of flood insurance

Sumter County entered the NFIP on March 15, 1982. Starting at a Class 10 for entry into the program, and has now evolved into a Class 7 with a goal of becoming a Class 6 in the near future. As a Class 10, policyholders receive a 10% discount on their policies. As the County's program progresses toward a Class 1, an additional 5% is taken off their policies such that as a Class 7 policyholders receive a 25% discount on their policies. Currently in Sumter County, there are more than 3,000 policyholders.

Repetitive Loss

There are two (2) repetitive loss properties within Sumter County. One being located on County Road 687 in the City of Bushnell, and the other on SW 112th Road, also located in the City of Bushnell. The Sumter County Development Service Division notifies each of the property owners that the Repetitive Flood Claims Grant Program and Pre-Disaster Mitigation Grant Program are available should they desire assistance.

Building Code Ordinance

SC Code Division 8, Section 13-601- Flood resistant development, outlines the standards for development in a floodplain. Development goals are to assure that:

a) The proposed development is consistent with the need to minimize flood damage, and

b) All public utilities and facilities such as sewer, gas, electrical and water systems are located and constructed to minimize or eliminate flood damage, and

c) Adequate drainage is provided to minimize or reduce exposure to flood hazards

Sumter County Comprehensive Plan (Unified)

Objective 4.2, Flood Hazard Areas, provides that all development occurring within the 100-year flood hazard area through 2035, as determined by the effective Flood

Insurance Rate Maps published by the Federal Emergency Management Agency, shall provide for appropriate mitigation and loss avoidance. Five policies are in place that address mitigation actions to be taken:

1) Protection of flood storage and conveyance functions
2) Acquisition of flood prone properties
3) Filing of the 100-year floodplain
4) Control of allowable densities in the 100-year floodplain
5) Enforcement of the minimum flood prevention criteria of the NFIP

Comprehensive Emergency Management Plan

The Comprehensive Emergency Management Plan (CEMP) establishes the framework, as required by Chapter 252, Florida Statutes, to ensure that Sumter County is prepared to manage all hazards. As a planning and an operations-based document, it provides guidance for all aspects of emergency management. The CEMP emphasizes action within the five mission areas of the Emergency Management cycle: Prevention, Preparedness, Response, Recovery, and Mitigation. Functional roles and responsibilities are defined for each organization that is a partner in the Sumter County Emergency Management Program, providing for a comprehensive approach to reducing the effects of disasters on Sumter County's population and physical environment.

As outlined in the CEMP, the Emergency Management Department has the primary responsibility for the administration of emergency management activities. Within the scope of that responsibility, Emergency Management oversees or participates in a variety of committees and working groups both locally and regionally, whose focus is on daily, non-emergency planning activities. To ensure a proactive, day-to-day disaster planning process, the LMS, outlined in Sumter County Ordinance 2012-01, is incorporated into and used in the emergency planning process.

The purpose of the LMS is to coordinate all mitigation activities within the county. The LMS develops and revises the Local Mitigation Strategy Plan, and prioritizes local mitigation projects. Membership is open to all jurisdictions, county government, private and civic organizations, property owners associations, state agencies, independent special districts, and non-profit organizations supporting mitigation efforts.

County Wildfire Protection Plan

In 2011, The Florida Forestry Service collaborated with Sumter County in the development of a wildfire protection plan. The CWPP was presented to the LMS WG on December 13, 2012 and was approved. The Healthy Forests Restoration Act of 2003 authorizes CWPPs. This Sumter County CWPP meets the minimum requirements of the Healthy Forests Restoration Act. It is an assessment of the community's wildfire vulnerability, resources available to assist with wildfire mitigation and response, and an action plan for reducing wildfire vulnerability in the County. The CWPP furthers the goals and mitigation strategies of the LMS and is consistent with recommendations of the LMS Working Group.

State of Florida Sinkhole Study (In Progress)
The Florida Geological Survey (FGS) collaborated with the Federal Emergency Management Agency to conduct a three-year statewide assessment of sinkhole vulnerability in Florida. The project's end result will be a map designed to assist planners, builders, and environmental specialists in Florida's overall development. The map will also aid in the development of risk assessments and plans at the State and Local level. Sumter County Emergency Management staff members provide sinkhole information directly to the FGS whenever they respond to reported sinkholes that affect residential and commercial structures.

Florida Statewide Regional Evacuation Study (2010)
This study is an effort to create a standardized study and methodology across Florida concerning hazards that could require evacuation. The FDEM contracted the Regional Planning Councils in collaboration with local emergency management to conduct this study. The result of this project is a comprehensive regional evacuation study update that encompasses Citrus, Hernando, Levy, Marion, and Sumter counties.

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Annexes

A - Hazard Identification and Risk Assessment

B - Adoption Resolutions

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Annex - A

The Sumter County Hazard Identification and Risk Assessment

Sumter County Board of County Commissioners

Hazard Identification and Risk Assessment (HIRA)

June, 2015

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Figures

Tables

Acronyms and Abbreviations

AAL	Average Annualized Loss
AIDS	Acquired Immunodeficiency Syndrome
AWOS	Automated Weather Observing System
BFE	Base Flood Elevation
CDBG	Community Development Block Grant
CDC	Centers for Disease Control
CoCoRaHS	Community Collaborative Rain, Hail, and Snow Network
CRS	Community Rating System
DFIRM	Digital Flood Insurance Rate Map
DR	Disaster Declaration
ELAP	Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish
ED	Emergency Declaration
FCI	Federal Correctional Institution
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FGS	Florida Geological Survey
FHBM	Flood Hazard Boundary Maps
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FS	fire management declaration
FSA	Farm Service Agency
G	acceleration of falling object due to gravity
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Program
HVA	Hazard and Vulnerability Assessment
KBDI	Keetch-Bryam Drought Index
LFP	Livestock Forage Program
LIP	Livestock Indemnity Program
LOC	Level of Concern
MH	Multi Hazard
MMI	Modified Mercalli Intensity
Mph	Miles per Hour
MSL	Mean Sea Level
NAVD88	North American Vertical Datum of 1988
NCDC	National Climatic Data Center
NEMIS	National Emergency Management Information System
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PA	Public Assistance
PGA	Peak Ground Acceleration
PDSI	Palmer Drought Severity Index
RLP	Repetitive Loss Property

SARS	Severe Acute Respiratory Syndrome
SFHA	Special Flood Hazard Area
SRL	Severe Repetitive Loss
SURE	Supplemental Revenue Assistance Payments
SWFWMD	Southwest Florida Water Management District
TAP	Tree Assistance Program
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USP	United States Penitentiary
WUI	Wildland-Urban Interface

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Section 1: Introduction

The Hazard Identification and Risk Assessment (HIRA) is a tool that allows Sumter County to understand its threats and hazards and how the impacts may vary according to time of occurrence, season, location, and other community factors. This knowledge helps the county and its jurisdictions establish informed capability targets.

1.1 Purpose

The Sumter County HIRA identifies the hazards that could potentially affect the county's residents and businesses. This report will serve as technical background to support other planning initiatives such as the Comprehensive Emergency Management Plan (CEMP), the Local Mitigation Strategy (LMS), the Community Ratings System (CRS) annual re-certification, as well as, risk communication activities that the County may wish to perform.

The HIRA includes a community profile that provides background information on the county such as demographics, climate, and land use and development; the natural hazard identification process; the vulnerability assessment methodology used for this plan; and the natural and technological hazards profiles. The hazard profiles will include information pertaining to hazard description, geographic location, previous occurrence, impacts, probability of future occurrence, extent, and vulnerability.

1.2 Scope

The information in the vulnerability assessment generally includes impacts felt by county and local government, private citizens, businesses, and other non-governmental organizations (NGOs). Hazards identified and profiled in this plan include:

- Flood
- Severe Weather
- Tropical Cyclone
- Tornado
- Extreme Heat and Drought
- Extreme Cold and Hard Freeze
- Sinkholes
- Wildfire
- Hazardous Materials
- Utility Disruption
- Nuclear Power

Section 2: Community Profile

2.1 History

Sumter County's rich history spans more than 150 years, well prior to Florida becoming the 27th state. The earliest inhabitants of this region consisted of Native Americans including the Timucuan, Apalachee, and Tequesta tribes. However, theses tribes eventually left the region as Spanish Conquistadors moved through the Florida peninsula. Migrating Indians, most notably the Creek, absorbed many of the Native

Americans that were living in the territory. The early white settlers later branded the Creek as the Seminole Indians.

The Seminoles raised cattle and grew crops from the Apalachicola River to the St. Johns River. White settlers competed with the Seminoles for land as they encroached on Seminole settlements until hostilities broke out in 1816. U.S. forces led by Andrew Jackson confronted the Seminoles for two years during the First Seminole War (1816-18). Much of what is now eastern Sumter County was part of the original Seminole Indian reservation established under the Treaty of Moultrie Creek in 1823.

The Second Seminole War started on December 28, 1835, when Chief Micanopy led 180 Seminole Indians in a surprise attack on 100 U.S. troops traveling from Fort Brooke (near Tampa) under the command of Major Francis L. Dade. The Seminole Indians ambushed the U.S troops south of present-day Bushnell. Major Dade and all but two men lost their lives. Two badly wounded soldiers managed to return to Fort Brooke and three Seminoles died.

The battle site stands today as the Dade Battlefield Historic State Park in Bushnell. Reenactments of this famous battle occur every year on the last weekend in December, drawing crowds in the thousands. A museum and monuments are located in and throughout the park. Dade Battlefield also hosts the Inter-Tribal Native American Holiday Powwow in September each year featuring Native American art, music, and dance.

Prior to being established, Sumter County formed from parts of St. Johns County in 1822, Duval County later in 1822, Alachua County in 1824, and Marion County in 1844. On January 8, 1953, the Florida Legislature established Sumter County as Florida's 29th county. Sumter was named after General Thomas Sumter, a prominent Revolutionary War general who commanded the southern campaigns. South Carolinians were among the earliest white settlers in the new territory and held General Sumter in high regard. In 1881, the State Legislature further divided Sumter County into present day Sumter, Orange, and portions of Lake Counties.

Sumter County has had various county seats; the first was Adamsville in 1853. Adamsville played an important role in the area's commerce because of its proximity to the railroad, stage lines, and telegraph passage through the area. The seat later moved to Sumterville in 1858 and some documents show the Florida Legislature designating Leesburg as the seat for a brief period in 1868. A fire destroyed the Sumterville Courthouse and all of the county's official records in 1909. The loss of the courthouse along with nearly two decades of county records led to a 1912 countywide vote to establish a new County seat in Bushnell. Bushnell remains the county seat today. In January 2009, the Sumter County Board of County Commissioners passed a resolution expanding the functional boundaries of the designated area of the county seat to include all territory within the established boundaries of Sumter County, including incorporated and unincorporated lands.

As settlers expanded in the county, they found that it offered ideal climate and soil for agriculture. In 1860, the county's first census showed a population of 1,549, mostly farmers and citrus growers. By 1886, there were over 100 orange growers in the county until the freeze of 1894-95 destroyed citrus crops and industry. Many of the farmers converted to cattle ranching, and as a result, the county's population nearly doubled within ten years. For most of the 1900s, Sumter County remained a rural agri-business based economy.

The county has incorporated cities gained agricultural recognition. Center Hill formerly known as the "String Bean Capital of the World" with nearly 400 rail cars of green beans shipped from the community. Coleman became the "Cabbage Capital of the World" and Webster the "Cucumber Capital." The 'Parson Brown' orange, grown in Webster, was also a productive crop and successful contribution to the Florida citrus industry due to its popularity.

During World War II, the U.S. Army operated the Bushnell Army Airfield (AAF) just one mile east of Bushnell. The airfield was acquired by lease from various owners beginning in 1940, and was constructed the by the 841st Aviation Engineers Battalion in 1943. The U.S. Army used the site to train bomber pilots and aircrews, and the Chemical Warfare Service used a portion of the site in support of research The Army conducted in the Withlacoochee State Forest during World War II.

Bushnell AAF had a 6,000-foot hard-surface runway and a 4,000-foot steel-plank landing mat runway but had no radio facilities, no gasoline, and no hangars. The 6,000-foot runway was known as the "bomber runway," while the 4,000-foot strip was known as the "fighter runway." An aircraft parking area was located at the southwest end of the bomber runway.

Bushnell AAF was in use extensively in chemical warfare trials. In 1943, the Dugway Proving Ground Mobile Chemical Warfare Service Unit began experiments on chemical agents, setting up the Chemical Warfare Service Experimental Station. The airfield was a landing strip for the planes used in the field trials at the former Withlacoochee Bombing & Gunnery Range located in the Withlacoochee State Forest. The chemical tests ceased prior to the war ending and the airfield was closed in 1945.

In the past 30 years, developers of planned adult communities have also discovered Sumter County. What began as Orange Blossom Gardens, a small mobile home retirement community in the 1970s, The Villages is now the county's largest planned adult community with more than 100,000 residents and is the Nation's largest retirement community. More large developments and commercial industry are in the county's future.

2.2 Geographic Profile

Sumter County consists of an area of 580.31 square miles (371,398 acres), and is located in west central Florida, approximately 60 miles northwest of Orlando, 60 miles

northeast of Tampa, and 40 miles south of Ocala. Adjacent counties include Marion, Lake, Polk, Pasco, Citrus, and Hernando counties. The County is due east of, and inland from, Florida's Nature Coast. There are approximately 35 square miles of water area in the form of lakes, rivers, and canals, in the county.

The county has five municipalities: the cities of Bushnell, Wildwood, Coleman, Center Hill, and Webster. Additionally, The Villages comprises the majority of Sumter County's population and sprawls into neighboring Lake and Marion Counties; The Villages is one of the fastest growing retirement communities in the United States and is the fastest growing in Florida.

Municipal boundaries are illustrated in *Figure 1*.

City of Bushnell
Bushnell founded with the establishment of the Post Office on October 28, 1885, and incorporated 26 years later in 1911. The City is named after John W. Bushnell, Who was responsible for bringing the railroad to the community. The city is located approximately 50 miles north of Tampa and 50 miles west of Orlando.

The City of Bushnell exhibits a steady growth in both its commercial and its residential sectors with an estimated population of 2,418 reported in the U.S. Census 2010 Demographic Profile. The population increases considerably during the winter as seasonal visitors intersperse between their residences in Sumter County and other areas of the Nation.

The Bushnell City Council consists of five voting members: Mayor, Vice Mayor, and three members each running on four-year terms for seats one through five and each having one vote.

The City of Bushnell provides electric, water, wastewater, and sanitation services, all managed by a City Manager. Currently, water is supplied to over 1,200 customers, electricity is distributed to over 1,150 customers, and sanitation services are provided to over 1,100 customers.

Much of the county's business is still conducted in Bushnell. It houses the Sumter County Judicial Center along with the historic courthouse built in 1914. The Sumter County School District, Tax Collector, Supervisor of Elections, Sheriff's Office, and Property Appraiser offices are also located in the city. It is home to the Dade Battlefield Historic Park and the Kenny Dixon Sports Complex, a 30-acre sporting complex.

City of Center Hill
Center Hill's history also dates back to the beginnings of the Native American settlements when freed black slaves found their way to Florida and intermixed with the Seminoles to form settlements of Black Seminoles. The Black Seminoles settled in the Center Hill area in 1813 and named it Pelikalaha. Accompanying them was Seminole chief Micanopy, who made Pelikalaha a residence. White settlers later renamed the

settlement as Abraham's Old Town and Mobley Town after the Seminoles fled the area from the advancement of U.S. troops seeking justice for the Dade Massacre.

The Town of Center Hill was founded in 1842 and incorporated as a town in 1905. The city was re-incorporated in 1925 as the City of Center Hill. The city was primarily an agriculture-based community for more than a century with farms of green beans, citrus, and other produce crops. Due to crop loss from hard freezes and less water for irrigation, the town's economy eventually shifted towards an industry-based economy. Center Hill is vulnerable to flooding from the Big Prairie Canal and generally poor drainage. The community is also home to Central Beef, a major beef industry operation in the Southeast. Center Hill's current population is 988.

Center Hill operates under a city council government. The council consists of a Mayor and five voting council members.

City of Coleman

Farmers who farmed the Warm Springs Hammock first settled Coleman in 1882. It once was a thriving farming community with a hotel, shops, schools, and churches. Residents' here farmed citrus, cotton, vegetables, cattle, and cabbage. In 1923, it was once known as the cabbage Capital of the World. Like other Sumter communities, Coleman moved away from agriculture and its population shrank.

Today, it is a small city with a population of 703. The city comprised of historical buildings, which include an 1849 post office, 1895-train depot, 1869-school house, and 1913 jail built of stone and railroad ties. Recent improvements to its infrastructure, designed to service industrial areas, places the city in a position to attract new business to the area. Modern-day Coleman represents a family-oriented community with newly renovated parks and homes dating from the late 1800s as neighborhood focal points.

Strategically located in Central Florida and adjacent to Lake Panasoffkee and conservation lands, Coleman has the advantage of easy access to both beaches and larger metropolitan areas. The Free Flight Airport is located in Coleman. Its government is a city council consisting of a Mayor and five council members.

City of Webster

Webster was settled in the 1850s, but was originally called Orange Home or Orange City. The Post Master George Franklin discovered that an Orange Home already existed in Florida and gave the town the name of Webster, inspired from Webster's Dictionary. Like the other cities, Webster evolved from a thriving agri-business to an industrial based community. The E.C. Rowell Public Library, which maintains the Civil War Archives for the county, is also located in Webster.

Today, it is home to the Webster Westside Flea Market, one of the largest flea markets in the nation for more than 50 years. It extends over 40 cares, contains 2,000 stalls, and accommodates 1,200 vendors. Thousands of visitors frequent the market, which is open

every Monday. Webster has a thriving cattle industry and is the home of the Sumter County Livestock Sales.

The city's population is 826 and is governed by a city council consisting of five council members.

City of Wildwood

Wildwood began as a railroad center for Central Florida in the later 1800s and incorporated in 1889. I.E. Barwick, a Western Union telegraph operator, is credited with giving the community its name in 1877.

Sumter County was agriculturally based with limited available transportation modes for moving produce to market. The Tropical Florida Railroad Company brought the railroad to Wildwood from Ocala. The company added a 14-mile extension to Lake Panasoffkee in 1883. The line was further extended to Terrell and beyond helping the economy as farmers became able to ship their produce. Today, the railroad has expanded and CSX Transportation, Inc. now owns the lines and has a rail yard in the downtown area. Wildwood acts as a transportation hub with the convergence of Highway 44, Interstate 75, and the Florida Turnpike.

Wildwood is Sumter County's largest municipality with 6,788 residents. The form of government is the "the Commission-Manager plan." The City Commission makes up the governing body with powers as provided for in the City Charter to pass ordinances, adopt resolutions, and appoint a chief administrative officer to be known as the "City Manager," and to exercise all other powers provided for by the City Charter.

The City Commission consists of a Mayor-Commissioner and four Commissioners, whose terms of office shall be for four years; all of whom are elected at large and qualified as prescribed in the City Charter. Their terms of office begin on the second Monday in January following their election.

Unincorporated Areas

Adamsville

Adamsville is located east of Coleman off CR 468 north of Warm Springs Hammock. Adamsville was the original county seat, named after John Adams, the first citizen who settled on the old telegraph road known as the Andrew Jackson Highway. It is a small community with very little left standing from the thriving citrus industry of the 1880s.

Oxford

Oxford is a small community located at the border of Sumter and Marion Counties, off CR 466 and US 301. Originally named Sandspur, the community name changed to Oxford in 1879. After the 1894-1895 freeze ruined most of the area's citrus farms, a few families remained in Oxford where they turned to truck farming for a living. Cantaloupes and melons became a quality crop, and today tomatoes grow in and around Oxford, which remains a small rural community.

Royal

Royal is one of the oldest African American communities in the State of Florida. Founded in 1865, the community, originally known as Picketsville, was named for the white picket fences that marked its 40-acre homestead provided to former slaves from the Old Green Plantation located on the Withlacoochee River. In the late 1880s the settlement was renamed Royal. Royal's first industries were farming, logging, and naval stores. In 1874, the Reverend Alfred Brown built the community's first school, which was a one-room schoolhouse.

In 1968, the late Ellis Anderson established a day for previous Royal residents and their decedents to return home to attend the Annual Royal Homecoming celebration held on Father's Day. Ellis was the grandson of Reverend Lawrence and Moriah Anderson, one of the community's founding families. This event has grown to welcome between 5,000 and 6,000 visitors each year who participate in a parade, car show, and music concert during Sunday's festivities.

Lake Panasoffkee

The community of Lake Panasoffkee is a census-designated place with a population of 3,551 according to the 2010 census. It was one of the most important settlements of the black Seminole Indians in the early 1800s. The settlers grew crops, raised cattle, and established one of the oldest citrus groves in Florida. As the U.S. Army pursued the Seminole Indians white farmers and ranchers settled in the area establishing the town around 1880. It was the largest fruit center in the world, and in addition to citrus, sugar cane mills were located along the edge of the lake. Barrels of sugar and syrup were shipped north along with oranges. The 1890 hard freeze destroyed most of the citrus groves and other crops. As a result, the town became an important turpentine and lumber center during the latter part of the 19th century. Local residents also turned to the lakes for sustainment establishing fish camps as the fishing industry began to grow in central Florida.

Lake Panasoffkee is a natural spring-fed lake that connects to the Withlacoochee River with water depths seldom exceeding four feet with dense vegetation, making it one of the best bass fishing locations in Florida. The lake is designated as a 4,460-acre Fish Management Area filled with largemouth bass, bluegill, and shellcrackers.

Owing to development around Lake Panasoffkee, water levels dropped significantly during the mid 1900s prompting the development of the Wysong Dam in1962. Support for the dam created a debate among local residents that lead to the deliberate destruction of the dam. The Southwest Florida Water Management District (SWFWMD) rebuilt the dam in 1981 only to dismantle it in 1988. In 2002, SWFWMD installed a fabridam with a boat lock, which exists today as the Wyson-Coogler Water Conservation Structure.

St. Catherine

St. Catherine is located in southern Sumter south of Bushnell off US 301 bordering Hernando County. The community once existed in the 1860s as a busy junction of the

Seaboard Airline and Atlantic Coastline Railroads. Each had a depot and telegraph operator. At one time, St. Catherine was the largest shipper of cucumbers. It was also home to a large turpentine distillery and a naval commissary.

Rutland
Rutland is a predominately-small agricultural community in the northwest section of the County. It is bordered by the Withlacoochee River to the southwest, Lake Panasoffkee to the southeast, Marion Oaks and rural Marion County to the north, and Wildwood to the east.

Sumterville
Sumterville proper is an integral part of Sumter County history as a twice elected the county seat. A stage line operated from Tampa to Sumterville, and continued operations when the railroad developed nearby, providing transportation for both passengers and freight.

Residents discovered that the local limestone, which covers a large portion of this section of the County, was a plentiful and valuable resource. Sumter County supplied crushed limestone rock for road construction and shipped it throughout southern Florida. The area around Sumterville is still home to a number of aggregate-mining operations. The Coleman Correctional Complex, Lake-Sumter State College, and Langley Medical Center are located on the edges of Summerville.

Wahoo
Wahoo is located in western Sumter County along CR 48. First settled by the Timucua Tribe, the area gradually became settled by the Seminoles. During the Second Seminole War, Wahoo and the surrounding areas served as shelter to the Seminoles and the site of several skirmishes including the Battle of Wahoo Swamp. Post-war white settlers migrated to the area and established the town in the 1840s. The new inhabitants settled in five distinct communities: Gum Slough-settled in 1845, Bay Hill, Hay's Ferry, Wahoo, and Weed's Landing. Between 1846 and the 1890s, the town developed a Baptist church (which remains today), stores, and a sawmill.

Seeking to protect the battle site, the Sumter County Historical Society applied in 2002 to have the 850-acre site placed under the protection of the state of Florida. The Florida Acquisition and Restoration Council granted the application and placed the site on the 2003 Florida Forever Priority list for the area's biodiversity. Today, the rural community connects to Bushnell with a population of more than 2,000 residents.

Mabel/Linden/Tarrytown
Mabel, Linden, and Tarrytown are very small adjacent communities off SR 50 east of CR 471. The Orange Belt Railway connected this area to Pasco County to the west and Seminole County to the east where citrus, cattle, and produce, were transported from Sumter County. Linden once had a Masonic Hall, a large railroad depot, and a telegraph office. Tarrytown borders the Withlacoochee State Forest and has a large sawmill that processes trees into wood and mulch. There is an Indian mound about 1.5 miles south

of the crossroads. Mabel continues its 100-year plus tradition of an annual picnic at the Linden Cemetery.

Croom-o-Coochee
Croom-A-Coochee is an unincorporated community that sits along the Little Withlacoochee River adjacent to the Croom Wildlife Management Area. Several homes are out of sight along the long lime rock driveways off the county roads.

The Villages
The Villages is Sumter County's largest community with more than 100,000 residents and is the nation's largest retirement community. The Villages is comprised of several smaller communities (villages) that span into Lake and Marion Counties. The Villages is developed and maintained through Community Development Districts (CDDs). The Villages currently operates 14 CDDs. Eleven of the 14 CDDs cover residential areas, and provide and maintain the roads and transportation paths, storm water systems and structures, underground utilities, curbs and gutters, and streetlights. The costs of building and maintaining this infrastructure are paid for by annual special assessments. District residents elect the members to serve on the District Board of Supervisors. The remaining three CDDs are similar in providing infrastructure and service through assessment for commercial properties. Unlike the residential CDDs, there are no residents within these three boundaries. Thus, the five-member Board of Supervisors for each district is composed of the developer's employees or affiliates.

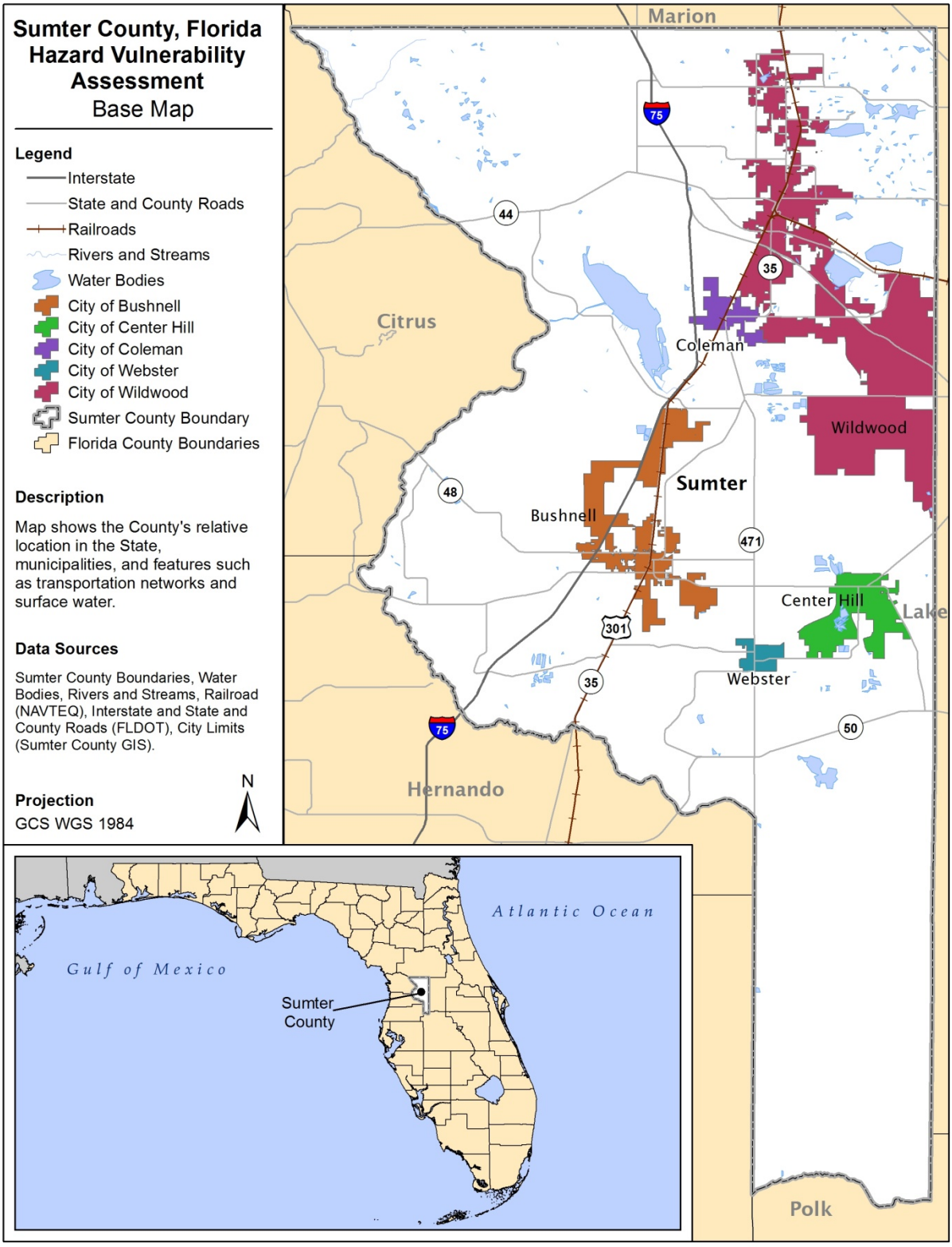

Figure 1 **Sumter County Base Map**

2.3 Demographic Profile

The U.S. 2010 Census estimates the County's population to be 93,420 with 171 people per square mile. Table 1 summarizes demographics, including housing units, income, and poverty level with comparison to the state totals. Table 2 represents population characteristics that are based on the 2012 U.S. Census estimates.

Table 1

2010 U.S. Census Demographics.

Demographic	Sumter County	Florida
Total Population	93,420	18,801,310
Number of Housing Units	58,035	9,031,051
Median Household Income	$46,981	$47,309
Persons Below Poverty Level	11.7%	15.6%

Source: U.S. Census Bureau State and County Quickfacts

Table 2

2012 U.S. Census Demographics.

Demographic	Sumter County	Florida
2012 Population Estimate	101,748	19,320,749
Population Characteristics (percent of 2012 estimates)		
Age		
Under 5 years	2.2%	5.5%
Under 18 years	8.3%	20.7%
Over 65 years	49.3%	18.2%
Race		
White	88.9%	78.3%
Black or African American	9.0%	16.6%
American Indian or Alaskan Native	0.4%	0.5%
Asian	0.7%	2.7%
Native Hawaiian or Pacific Islander	0.1%	0.1%
Two or More Races	0.8%	1.9%
Hispanic or Latino Origin	5.8%	23.2%

Source: U.S. Census Bureau State and County Quickfacts
http://quickfacts.census.gov/qfd/states/12/12119.html

Table 3 summarizes the institutionalized population in Sumter County and Florida. Roughly, 10% of the County's population is living in group quarters, with the majority of this population residing in adult correctional facilities. Incarcerated individuals are represented in the census data based on where they are imprisoned.

Table 3

2010 U.S. Census Demographics for Correctional Facility Populations

Demographic	Sumter County	Florida
Total Population in Group Quarters	8,952	421,709
Institutionalized	8,870	254,506*
Correctional Facilities	*8,606*	*167,453*

Source: U.S .Census Bureau American FactFinder

The State of Florida Council on Homelessness determined that in 2011, there were 57 homeless people living in Sumter County. The 2013 estimate, according to the Florida Department of Children and Families, indicates that there were 37 homeless people living in the County. Both of these estimates are much higher, compared to the 2010 U.S. Census Emergency and Transitional Shelters population.

The County's population has seen a steady increase in the past thirty years. Table 4 shows historic population totals and the percent change from the previous census period for Sumter County.

Table 4

Historical Census Populations.

Census Year	Total Population	Percent Change from Previous Census
2010	93,420	75%
2000	53,345	69%
1990	31,577	30%
1980	24,272	N/A

Source: Florida Legislature Office of Economic and Demographic Research

Population forecasts are available through the Florida Legislature Office of Economic and Demographic Research. Forecasts illustrate the population for future years based on plausible courses of future population change. Projections indicate that the County will grow steadily by approximately 42% to 132,536 by the year 2020, as compared to the 2010 U.S. Census. Table 5 summarizes the projected population estimates for 2015 and 2020.

Table 5

Population Forecasts 2015 through 2020.

2010 (U.S. Census)	93,420	-
2013 (estimate)	108,483	16.1%
2015 (estimate)	115,447	23.7%
2020 (estimate)	138,220	19.3%

Source: Florida Legislature Office of Economic and Demographic Research

The Sumter County Comprehensive Plan (2012) Future Land Use Element includes the counts for both permanent and seasonal populations within unincorporated Sumter County.

Table 6 includes the population and population projections to 2035 for unincorporated Sumter County.

Table 6

Sumter County (Unincorporated) Permanent & Seasonal Population.

Population	2010	2012	2017	2022	2035
Permanent	72,947	78,485	89,604	104,289	155,693
Seasonal	85,120	91,582	105,556	121,691	181,674
Number of Housing Units needed for Permanent Population	35,758	38,473	43,924	51,122	76,320

Source: Sumter County 2012 Comprehensive Plan

Table 7 is a breakdown of Sumter County's vulnerable populations. These populations may require additional attention during the planning, response, and recovery phases of a disaster. Sumter County Emergency Management maintains a Special Needs program via registration and has a specific shelter to accommodate this population.

Table 7

Description of Special Needs and population estimates of these needs for Sumter County.

Vulnerable Population	Special Needs Description	Estimate
Physically/Mentally Impaired	A physical or mental impairment that substantially limits one or more major life activities of such individual (42 U.S. Code § 12102)	No estimate available
Hearing Impaired	A hearing impairment is a hearing loss that prevents a person from totally receiving sounds through the ear.	6,257 people
Vision Impaired	A visual impairment is eyesight that cannot be corrected to a normal level of medically determined good vision.	1,948 people
Language	In the United States, an individual or population that speak English less than very well.	2,900 people
Female Headed Household	A household in which there is no male present, there are related children under 18 years of age, and the household lives below the poverty level.	2,365 households
Mobile Home Units	Residential Property: The value, quality, and density of residential	9,504 Units

	construction affect potential losses and recovery. Mobile homes are easily destroyed and less resilient to hazards.	
Age (65+ / 18 and under)	Extremes of the age spectrum affect the movement out of harm's way. Children of a very young age cannot take care of themselves; and elderly may have mobility constraints or mobility increasing their vulnerability to risks.	8,512 people of which 7,826 are 65+ and live alone.

2.4 Transportation

Transportation systems are integral in providing an effective emergency response and influence the impact of disasters on communities. In addition to more immediate needs, businesses and employees suffer economic consequences when roads are closed as the result of hazards. This would affect the City of Wildwood, a transportation hub for industries and business, as it is the only city in the state with immediate access to the Florida Turnpike, Interstate 75, US 301, and SR 44. The Florida Department of Transportation (FDOT) is responsible for the maintenance of all roads within the county. Table 8 below provides information on the major regional roadways that provide connections from the County to adjacent counties and to the region and state.

Table 8

Major regional transportation routes.

Route	Direction	Importance
I-75	North/South	- Main connection between Marion and Hernando counties - Interstate connection to states north and Miami to the south - Primarily pass-through traffic, heading to or from the Tampa Bay region and the Orlando metro region, as well as Southwest Florida and Miami/Fort Lauderdale
Florida Turnpike	North/Southeast	- Primarily pass-through traffic, heading to or from the Tampa Bay region and the Orlando metro region, as well as Southwest Florida and Miami/Fort Lauderdale

US 301	North/South	- Connection between Marion and Hernando counties - Connection to Lake County
US 27/441	North/Southeast	- Connection between Marion and Lake counties
SR 471	North/South	- Connection to Polk County
SR 44	East/West	- Connection between Citrus and Lake counties
SR 48	East/West	- Connection between Lake and Citrus counties
SR 50	East/West	- Connection between Hernando and Lake counties
C 470	Northwest/east	- Connection with Lake County and between I-75 and Florida Turnpike

Other key transportation and freight facilities in Sumter County include CSX rail lines and station in Wildwood. CSX currently rolls 15 to 25 trains per day through Sumter County, each pulling up to 90 freight cars.

Air service is provided primarily outside of the county limits and includes Tampa and Orlando International Airports, and general aviation airports, Leesburg Regional and Ocala International. The nearest seaport access is the Tampa Port Authority. Three bus shuttle routes connecting the county from north to south provide public transportation.

Figure 2 highlights key transportation networks and locations throughout the County.

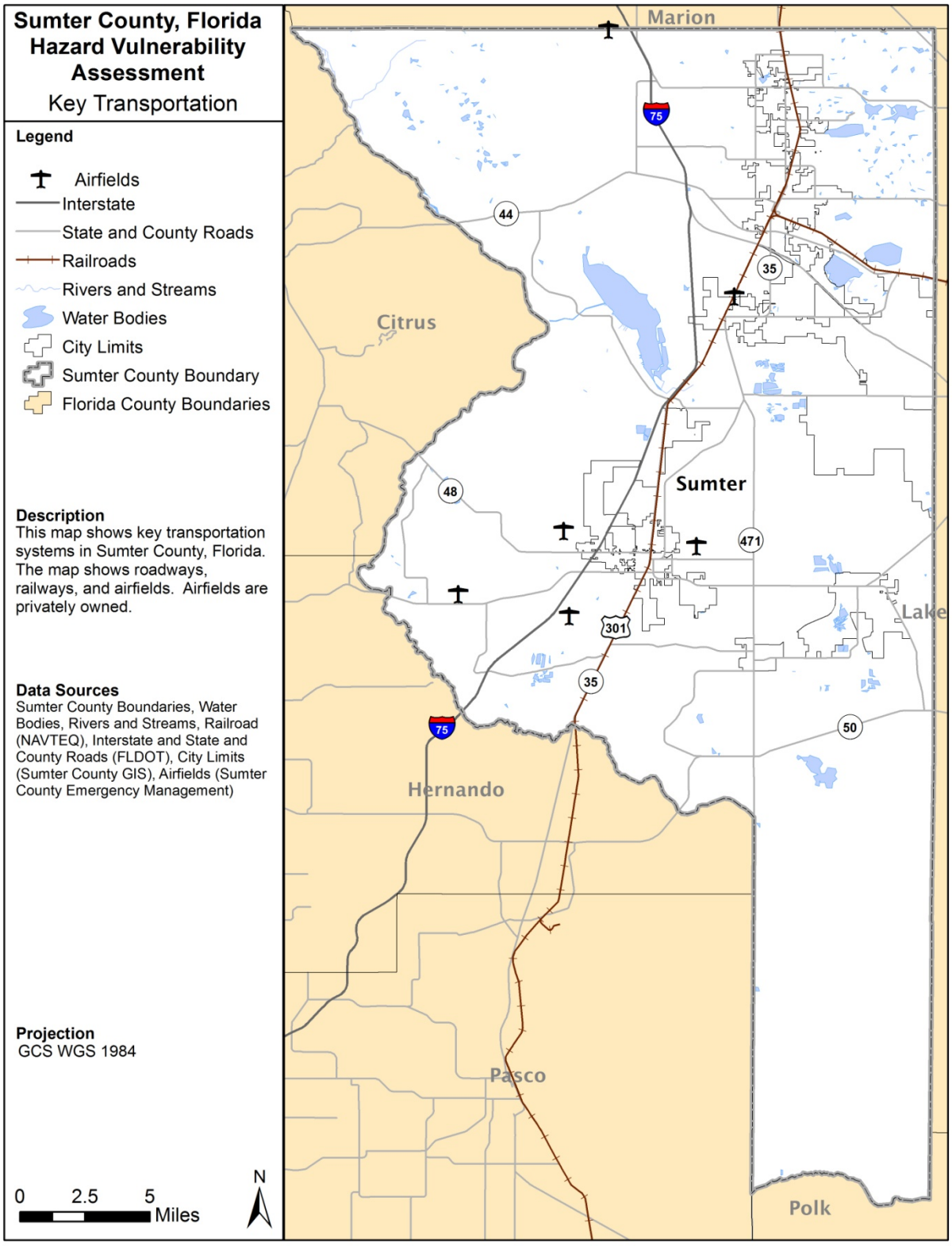

Figure 2 **Key Transportation**

2.5 Utilities

The County Public Works Division does not maintain any sewer or water lines. There are eighty-seven entities that provide portable water to the county; the major providers are included in Table, along with the primary wastewater treatment providers.

Electric Providers

County electric providers include Duke Energy, Sumter Electric Cooperative (SECO), the City of Bushnell Electric, and the Withlacoochee River Electric Cooperative (WREC).

Tampa Electric Cooperative (TECO) provides gas lines to the county.

Table 9

Major Water Utility Providers within Sumter County.

Community	Service Area (approx.)	Water	Wastewater
Bushnell	2,109	City of Bushnell	City of Bushnell
Center Hill	762	City of Center Hill	Service not available
Coleman	824	City of Coleman	Service not available
Webster	800	City of Webster	City of Webster
Wildwood	16, 347	City of Wildwood	City of Wildwood
Unincorporated Areas			
The Villages	Little Sumter: 25,382 Central Sumter: 1,569 North Sumter: 44,517	Little Sumter Service Area Central Sumter Utility Company LLC North Sumter County Utility Dependent District	Little Sumter Service Area Central Sumter Utility Company LLC North Sumter County Utility Dependent District

2.6 Climate and Geography

Sumter County has a semitropical climate, characterized by warm, humid summers and mild, dry winters. The average annual temperature is about 71 degrees Fahrenheit. Daily maximum temperatures average 81 degrees Fahrenheit in the summer and 58 degrees Fahrenheit in the winter. Temperature extremes of over 100 degrees or under 20 degrees Fahrenheit are rare. Average annual precipitation is about 50 inches, most of which occurs in the June-October rainy season.

Hydrology

Sumter County crosses two watersheds, the Ocklawaha and Withlacoochee. Lake Panasoffkee is the largest lake in the County and the third largest lake in west central Florida. The Withlacoochee and the Little Withlacoochee rivers serve as county boundaries to the west and south. The Dead River, Outlet River, and Jumper Creek are major waterways of the Withlacoochee River. Jumper Creek flows north through the county from its source in the Green Swamp, out to the Gulf of Mexico. The confluence with the Little Withlacoochee River is located in the middle section of the Withlacoochee River. Small lakes and artesian springs feed the waterways from the aquifer.

Geology and Topography

The county's major landforms are further defined by the following distinct geomorphologic areas:

- **Western Valley**: North-south irregular shaped low area that borders Brooksville Ridge on the West and Sumter and Lake Uplands on the east. Elevations range from 40 to 100 feet above mean sea level (MSL).

- **Tsala Apopka Plain:** Bounded by the Brooksville Ridge on the west and Withlacoochee River Valley and Lake Panasoffkee on the east. The plains are the lowest and flattest portion of the Valley. Elevations range from 40 feet at the Tsala Apopka Lake to approximately 75 feet above MSL.

- **Brooksville Ridge:** Forms the western boundary of the Valley and represents a small portion of Sumter County. The ridge is composed of limestone, overlain by clayey sands, sandy clays, clays, and Pleistocene sands. This composition limits downward percolation of groundwater and dissolution of the limestone core of the ridge. Elevation ranges from 70 to 200 feet above MSL.

- **Sumter and Lake Uplands:** Form the north and eastern boundaries of the county. These two upland areas are separate by Lake Harris Cross Valley. The elevations of the two uplands decrease in a northerly direction. Sumter County elevations within this area range from 50 to 100 feet above MSL in the north to 75 to 140 feet above MSL in the southern portion.

- **Lake Harris Cross Valley:** An east-west trending valley spans 8 to 10 miles in length and 3 to 5 miles in width, connecting the Western and Central valleys. The area is made up of a series of lakes and swamps associated with Lake Okahumpka in the west and Lake Harris in Lake County to the east.

As described above the topography of Sumter County is relatively flat with some gently rolling hills. Ground elevations in Sumter County range from less than 30 feet northwest of the City of Centerville and up to 165 feet referenced to the North American Vertical Datum of 1988 (NAVD88) along the eastern boundary with Lake County in the southeastern portion of the City of Wildwood.

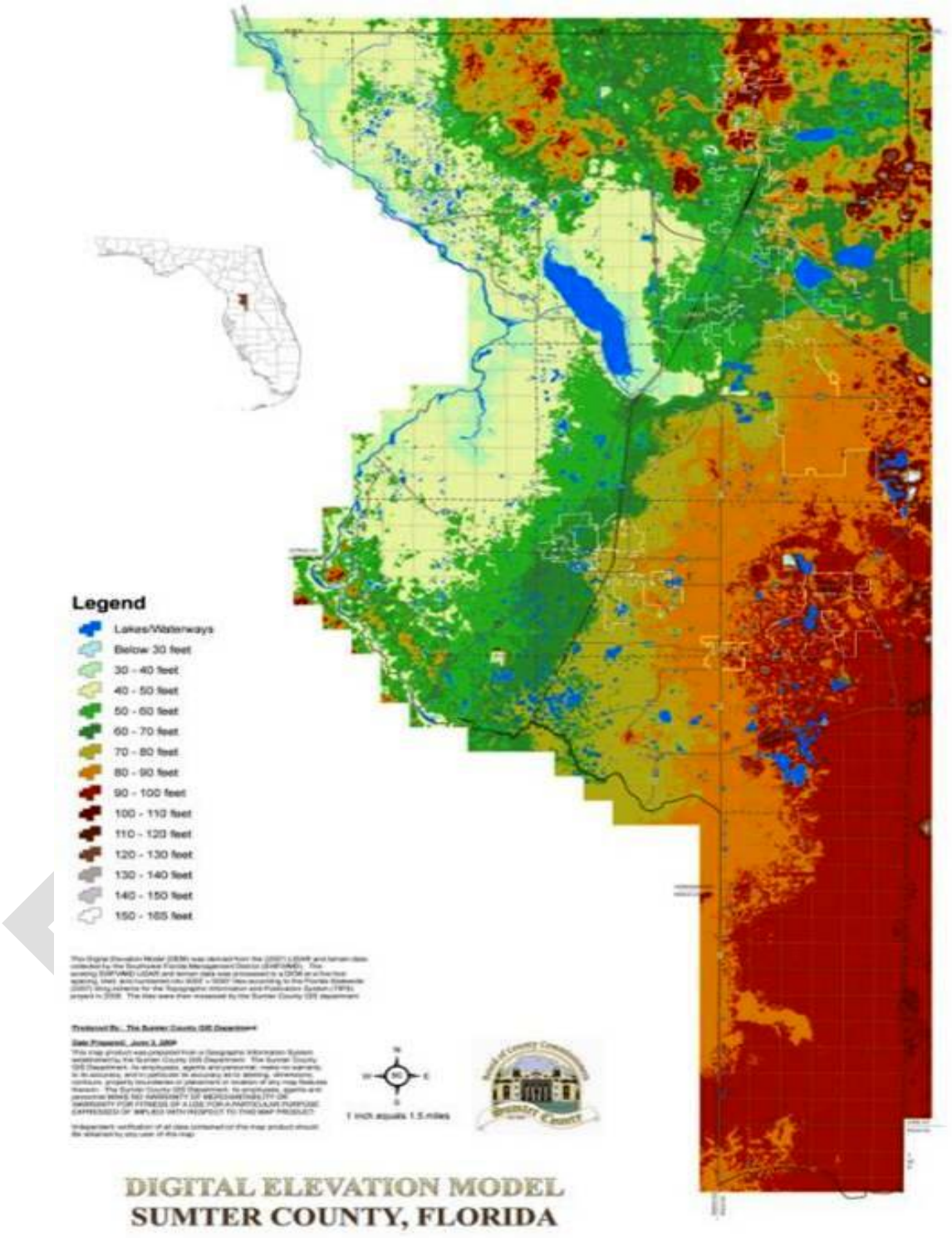

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Figure 3 Digital Elevation Model (DEM) for Sumter County.

Source: http://fl-sumtercounty.civicplus.com/index.aspx?NID=238

The Floridian aquifer, composed of limestone and dolomite, is located under all of Florida and is the underground water source for the majority of the potable water systems in Florida. Rainfall can erode and dissolve the limestone, forming sinkholes. Drought, along with high groundwater withdrawals, can make conditions favorable for sinkholes to form. Heavy rains after droughts can also cause enough pressure on the ground to create sinkholes.

Soils are classified into hydrologic soil groups to indicate the minimum rate of infiltration obtained for bare soil after prolonged wetting. The County is characterized by only a few areas of Group A and Group B hydrologic soil groups that support moderate to high infiltration rates and low runoff potential. Group A soils consist primarily of deep, well to excessively drained sand or gravel and have a high rate of water transmission (greater than 0.30 inches per hour). Group B soils are of moderately fine to moderately coarse textures and have a moderate rate of water transmission (0.15 to 0.30 inches per hour). The majority of A and B soils occur in the northern part of the County, in the area of The Villages, near the City of Bushnell, and at the southwest boundary toward the Withlacoochee River.

Group B/D, C, and D hydrologic soil groups, signifying lower infiltration rates and higher runoff potential, characterize the greater part of the County. Group C soils are of moderately fine to fine texture and have a low rate of water transmission (0.05 to 0.15 inches per hour). Group D soils consist primarily of clay soils with high swelling potential and/or with a permanent high water table and a very low rate of water transmission (0 to 0.05 inches per hour). These hydrologic groups correlate to the wetlands of the Green Swamp and the Withlacoochee River; many acres of these lands are protected by various government agencies for conservation purposes. The infiltration rates and runoff potential of these groups can be improved for development with alteration however, the extent of overlaying wetland features must be determined concurrent with federal, state, and local permitting requirements, and other land development regulations.

The United States Department of Agriculture (USDA) soil survey for Sumter County includes detailed descriptions of the 16-soil map units located within the County. The survey categorizes soil map units into four groupings: Sandy Soils of the Upland Ridges, Sandy Soils of the Low Ridges, Sandy Soils of the Flatwoods and Depressions, and Mucky, and Sandy Soils of the Swamps, Marshes, and River Flood Plains.

The majority of Sumter County is Ocala Limestone with a portion of undifferentiated sediment in the Lake Uplands area in the central part of the county. The northeastern border with Lake County is composed of Cypress head Formation, while Holocene sediments are found in the central eastern area, and reworked Cypress head sediments are located along the southern portion of the border with Lake County.

2.7 Land Use and Development

Existing Land Use

The Unified Sumter County, City of Center Hill, City of Webster - Comprehensive Plan, dated May 2012 identifies agriculture as the largest land use in the County. A more extensive explanation of the existing land uses in the county can be found in the Data & Analysis chapter of the Plan.

Figure 4 shows the existing land use based on data from the Florida Department of Revenue Property Tax Oversight. Approximately 64,161 of 83,722 parcels have been designated as residential use. Of the residential properties, 7,953 parcels have been classified as mobile home property types.

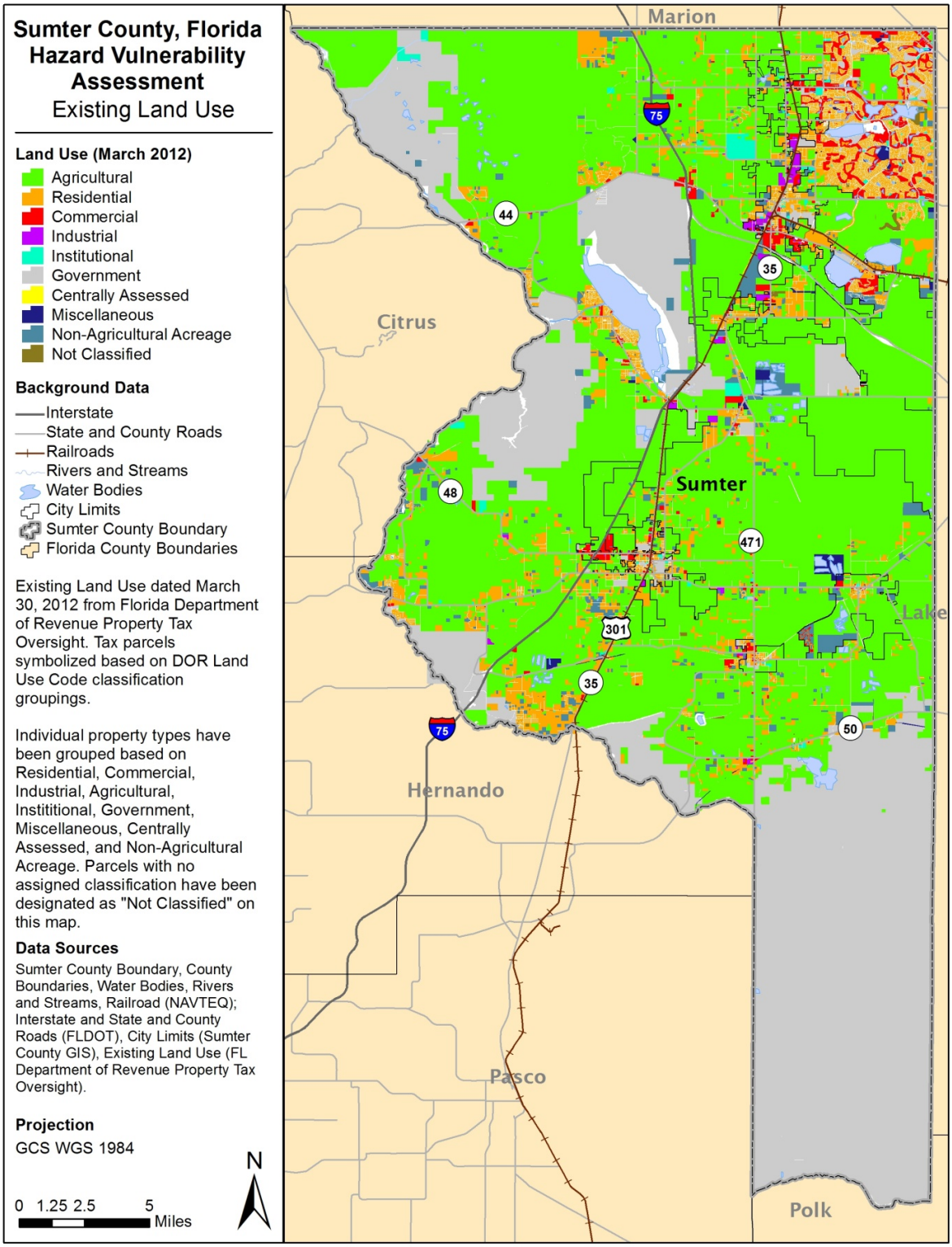


Figure 4 **Existing Land Use**

Future Land Use

The 2035 Future Land Use Map identifies areas for future residential and economic development within the county. The plan highlights 195,462 acres suitable for residential development within the unincorporated county with approximately 87,323 additional housing units and an estimated 167,208 people. This projection does not account for wetlands, floodplains, or other areas not suited for development, making the actual amount of developable land less. A more extensive explanation of future land use in the county can be found in the Data & Analysis chapter of the Unified Sumter County-City of Center Hill-City of Webster Comprehensive Plan dated May 2012.

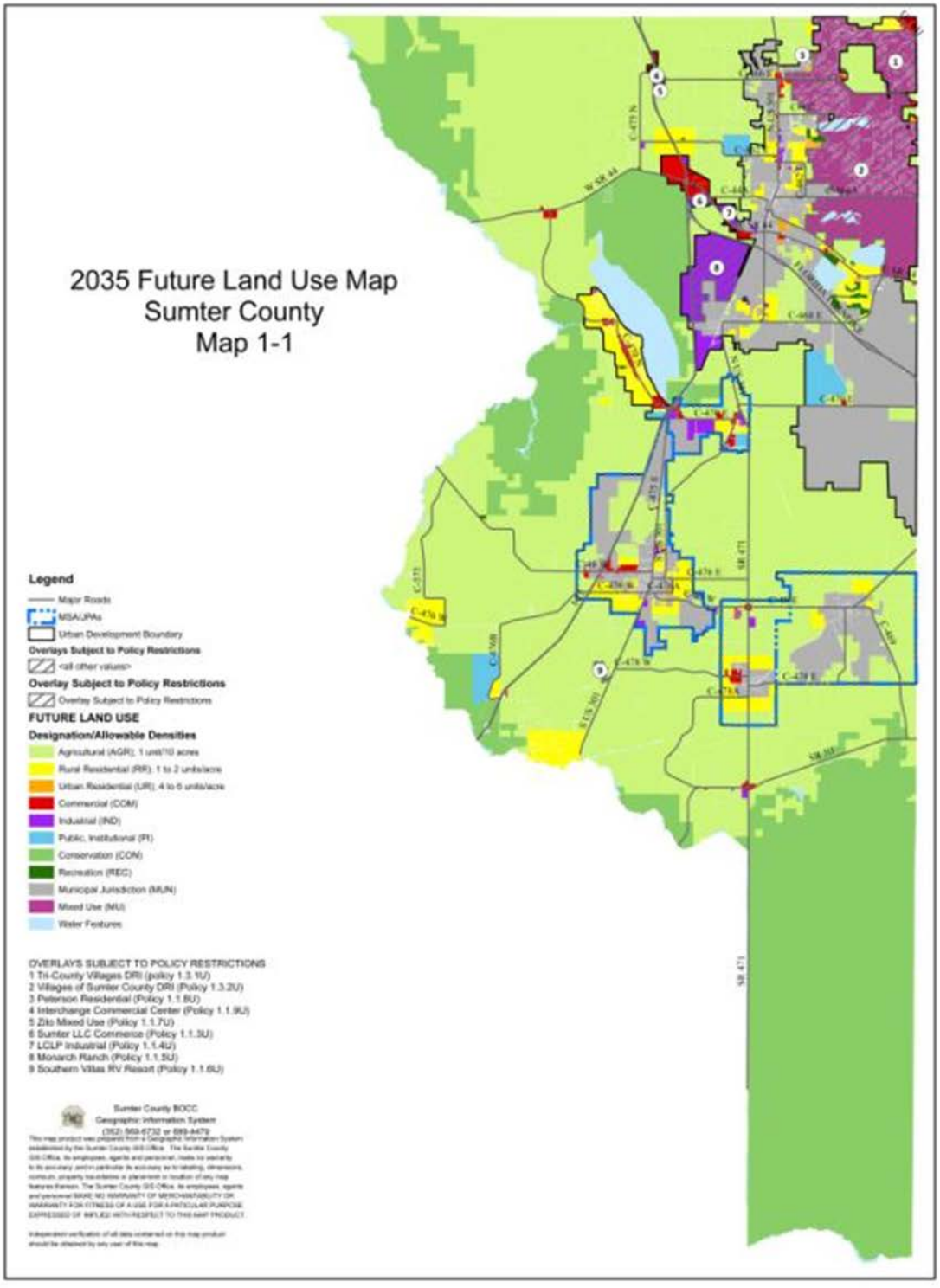


***Figure 5* Future Land Use**.
Source: Sumter County Comprehensive Plan

2.8. Critical Community Facilities

Sumter County Emergency Management maintains a list of critical community facilities found within the county. The facilities on the list correspond to the U.S. National Grid system and were geocoded and mapped for this HIRA. The list includes the following types of facilities:

- Communication Tower
- Correctional Facility
- Educational Institution
- Energy Provider
- Fire Station
- Government
- Health Care
- Law Enforcement
- Library
- Media
- Shelter
- Wastewater Treatment
- Water Authority

Table 10 shows the distribution of these facilities within the county and municipalities.

Education Facilities and Services

Sumter District Schools are responsible for the operation of public schools in Sumter County. According to the Florida Department of Education, public school enrollment at public schools within the County totaled 7,572 students during the 2011-2012 school year. Public schools are included in Table 10.

Table 10

Sumter County Public Schools

Education	Schools
High School	South Sumter High School
	Wildwood High School
Middle School	South Sumter Middle School
	Wildwood Middle School
Elementary School	Bushnell Elementary School
	Lake Panasoffkee Elementary School
	Webster Elementary School
	Wildwood Elementary School
Other Public Schools	Sumter County Virtual Instruction Program
	West Street School
	Sumter Alternative School
Charter Schools	The Villages Charter School

Two private schools also serve students within Sumter County. The 2010 U.S. Census indicates that the total school enrollment, including private schools, for students three years of age and over was 9,366. Nursery school and kindergarten enrollment was 1,078; elementary (grades 1-8) and high school enrollment was 6,189; and college or graduate school enrollment was 2,100.

Lake Sumter State College is a higher education institution with one campus in Sumter County located in Sumterville. Enrollment was 7,857 during the spring of 2012. The U.S. Census acknowledges that within Sumter County, 34% of people 25 years of age and over have graduated from high school and 23% have a bachelor's degree or higher.

Correctional Facilities

There are 10 correctional facilities within the county, five within Bushnell, and five within Sumterville.

The Federal Correctional Complex, located in Sumterville, is the largest federal complex in the Federal Bureau of Prisons. It consists of four facilities: United States Penitentiary

(USP) Coleman I, USP Coleman II, Federal Correctional Institution (FCI) Coleman Low, and FCI Coleman Medium. USP Coleman I and II are high security facilities while FCI Coleman Low and Medium are low and medium security facilities, respectively. In addition, FCI Coleman Medium has a minimum-security satellite camp adjacent to it. The Sumter Correctional Institution is located in Bushnell. The facility was established by the state in 1965 to house minimum and medium custody male juvenile inmates. Currently, it houses adults and male juvenile offenders.

The Sumter County Jail and Detention Center is also located in Bushnell. Table 11 lists the population of these correctional facilities.

Table 11

Sumter County Inmate Population.

Correctional Facility	Population
Coleman Federal Penitentiary High Security	2,981
Coleman Federal Penitentiary Medium Security (Camp and prison)	2,048
Coleman Federal Penitentiary Low Security	1,801
Sumter Correctional Institution	1,256 people (max. capacity is 1,701)
Sumter County Jail and Detention Center	233 people average per day

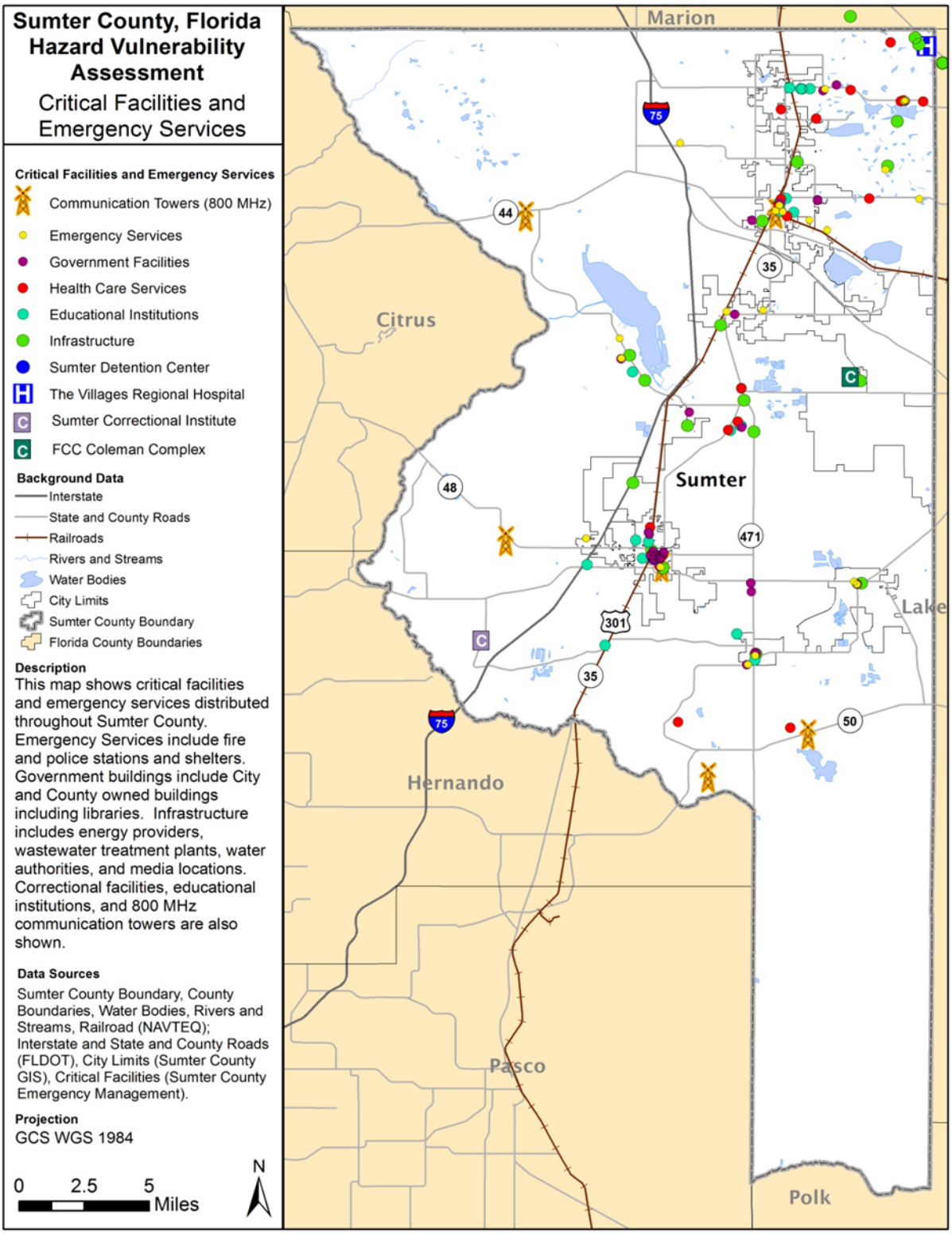


Figure 6 **Critical Facilities**

2.9 Economic Activity and Employment

Current Economic Activity

According to the Florida Department of Transportation, the top five growing industries in Sumter County include:

- Health care and social assistance
- Administrative, support, waste management, and remediation services
- Real estate, rental and leasing
- Other services (except public administration)
- Professional, scientific, and technical services

Major contributors to Sumter County's economy include agriculture, industries such as Central Beef, Inc. processing plant, metal fabrication and manufacturing, and the mining industry. Other sources of economic revenue in Sumter include tourism.

The exchange market for the county, as illustrated in Table 12, is generally limited to intrastate commerce with neighboring counties.

Table 12

Sumter County Exchange of Goods with Nearby Jurisdictions

	Imports	Exports
Goods	• Bulk movement in boxcars • Clay, concrete, glass, or stone • Lumber or wood products • Food of kindred products • Petroleum or coal products	• Nonmetallic minerals • Lumber or wood products • Clay, concrete, glass, or stone • Primary metal products • Waste or scrap metal
Markets	• Lake County • Miami-Dade County • Hillsborough County • Orange County • Polk County	• Hernando County • Marion County • Lake County • Citrus County • Hillsborough County

The 2010 Strategic Economic Development Plan provides additional details regarding Sumter County's future economic growth direction. In general, the County is interested in the recruitment and expansion of industries such as healthcare and medical services; medical research and development; logistics and distribution; manufacturing, electronics and electronic equipment; regional or corporate headquarters; agribusiness; ecotourism, and agro-tourism.

Primary Economic Activity Centers identified in the Unified Comprehensive Plan are given additional allowances and exemptions from policies and regulations to promote economic development and further job creation. Examples of such incentives are floor area ratio bonuses and promotion of mixed-use development. The activity centers are accessible to the county's strong transportation network and existing or planned utilities; and have a low impact on surrounding residential lands. Primary Economic Activity Centers are focused on three areas of the County:

- US 441/27, near The Villages
- SR 44/I-75/Florida Turnpike/US 301, near City of Wildwood and City of Coleman
- C-470, near City of Bushnell

Employment

According to the 2010 U.S. Census, approximately 25% of Sumter County's population over 16 years of age was employed. The unemployment rate, as of August 2013, was 5.9%, which is lower than the overall rate of 7.2% statewide.

The largest industry sectors for employment include:

- Leisure and hospitality – 20.7% of workforce,
- Trade, transportation, and utilities – 17.6% of workforce
- Education and health services – 22.7% of workforce.

Table 13

Ten Largest Major Employers

Employer	Sector	Number Employed
Coleman Federal Prison	Public	1,800
Sumter District Schools	Public	900
The Villages	Public	700
T&D Concrete	Private	520
Sumter Correctional Institute	Public	500
Villages Regional Medical Center	Private	420
Lake Sumter Community College	Public	365
Wal-Mart Superstore	Private	340
Sumter Electric Cooperative	Public	300
Sumter County Government	Public	180

Section 3. Hazard Vulnerability Assessment Methodology

3.1 Hazard Identification Process

Sumter County Emergency Management and the Local mitigation Strategy Working Group (LMS WG) selected the hazards identified in the HIRA. The methodology for assessing these hazards consists of two parameters: probability and severity. Probability is associated with the likelihood of the hazard occurring while severity is a qualitative measure of the impact consequences from the hazard. These parameters are described in Table 14 below.

Table 14

Hazard Assessment Methodology.

Parameter	Classification/Rank	Description of Classification/Rank				
Probability	High	Annual event [reliably occurs every year at least once]				
	Medium	Approximately every 5-10 years [occurs every few years]				
	Low	Greater than 20 years [rarely occurs]				
Severity	Impact	Injury/Illness	Economic Loss	Duration	Extent of Impact	Environmental Impact
	High	Death/Severe Injury or Illness	>$1M	>2 days	National/State	Major impact to ecosystem
	Medium	Minor Injury/Illness	>$250K <$1M	4 hours to 2 days	County-wide	Minor impact to ecosystem
	Low	No Injury or Illness	<$250K	<4 hours	Localized	Negligible impact to ecosystem

3.2 Historical Hazard Datasets

Federal Disaster Declarations

According to the Federal Emergency Management Agency (FEMA), since 1968 there have been 11 major disaster declarations (DR), two emergency declarations (EM) and

one fire management declaration (FS) for Sumter County. Past emergencies and disasters are listed in

Table . The Federal Disaster Declaration history is a useful tool for evaluating future occurrence of hazard events.

Table 15

Declared Disasters for Sumter County

Disaster Type	Disaster Number	Incident Type	Title	Incident Begin Date	Stafford Act Programs Declared
DR	252	Hurricane	Hurricane Gladys	11/7/1968	PA Categories A-G HMGP
DR	526	Freezing	Severe Winter Weather	1/31/1977	PA (categories unknown) HMGP
DR	851	Freezing	Severe Freeze	12/23/1989	PA (categories unknown) HMGP
DR	982	Tornado	Tornadoes, Flooding, High Winds & Tides, Freezing	3/12/1993	PA Categories A-G IA HMGP
DR	1195	Severe Storm(s)	Severe Storms, High Winds, Tornadoes, And Flooding	12/25/1997	PA Categories A-G IA HMGP
DR	1223	Fire	Extreme Fire Hazard	5/25/1998	PA Categories A-G IA HMGP
FS	2299	Fire	Withlacoochee Fire Complex	5/19/2000	PA Category B
DR	1359	Freezing	Severe Freeze	12/1/2000	PA (categories unknown) HMGP
DR	1539	Hurricane	Tropical Storm Bonnie And Hurricane Charley	8/11/2004	PA Categories A & B HMGP
DR	1545	Hurricane	Hurricane Frances	9/3/2004	PA Categories A & B IA

Disaster Type	Disaster Number	Incident Type	Title	Incident Begin Date	Stafford Act Programs Declared
					HMGP
DR	1561	Hurricane	Hurricane Jeanne	9/24/2004	PA Categories A-G IA HMGP
EM	3220	Hurricane	Hurricane Katrina Evacuation	8/29/2005	PA Category B
DR	1679	Severe Storm(s)	Severe Storms And Tornadoes	2/1/2007	PA Categories A-G IA HMGP
EM	3288	Severe Storm(s)	Tropical Storm Fay	8/18/2008	PA Categories A & B

USDA Farm Service Agency Disasters

The United States Department of Agriculture (USDA) Farm Service Agency (FSA) Disaster Trust Fund program named Supplemental Revenue Assistance Payments (SURE) program, provides assistance to producers who suffered crop loss in counties declared a disaster by the Secretary of Agriculture. USDA has four additional disaster programs listed below.

Livestock Forage Program (LFP) provides compensation to eligible livestock producers that have suffered grazing losses due to drought or fire. Impacts can occur on land that is native or improved pastureland; with permanent vegetative cover, or that is planted specifically for grazing.

Livestock Indemnity Program (LIP) provides benefits to livestock producers for livestock deaths, in excess of normal death rates, caused by adverse weather or attacks by animals reintroduced into the wild by the federal government.

Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish (ELAP) provides emergency assistance to eligible producers of livestock, honeybees, and farm-raised fish for losses due to disease, adverse weather, or other conditions, such as wildfires, not covered by LFP and LIP**.**

Tree Assistance Program (TAP): TAP provides financial assistance to qualifying orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes, and vines damaged by natural disasters.

Table 16 summarizes the assistance provided by these programs to applicants from Sumter County. Data available from the USDA at the county level spans 2008 to 2011.

Table 16

Summary of the Tree Assistance Program

Program Name	Year	Total Payments	Transaction Amount
Livestock Forage Program	2008	59	$176,675
	2011	5	$91,962
Livestock Indemnity Program	2010	2	$3,157
SURE	2008	54	$336,210
	2008	34	$127,958
	2009	15	$123,559
	2010	8	$14,463
	2011	7	$50,063

Source: USDA Farm Service Agency, 2008-2011

National Climatic Data Center (NCDC)

The National Ocean and Atmospheric Administration (NOAA) publish NCDC Storm data. The storm events database contains information on storms and weather phenomena that have caused loss of life, injury, significant property damage, and/or disruption to commerce. Efforts are made to collect the best available information. Time and resource constraints place the rate of information flow generally 90-120 days behind the current month potentially leaving some data unverified for a period by the National Weather Service (NWS). The NWS has a set of guidelines it uses for standardized preparation of event descriptions. Recorded events in this database used for Sumter County historical reference range from 1950 through 2013.

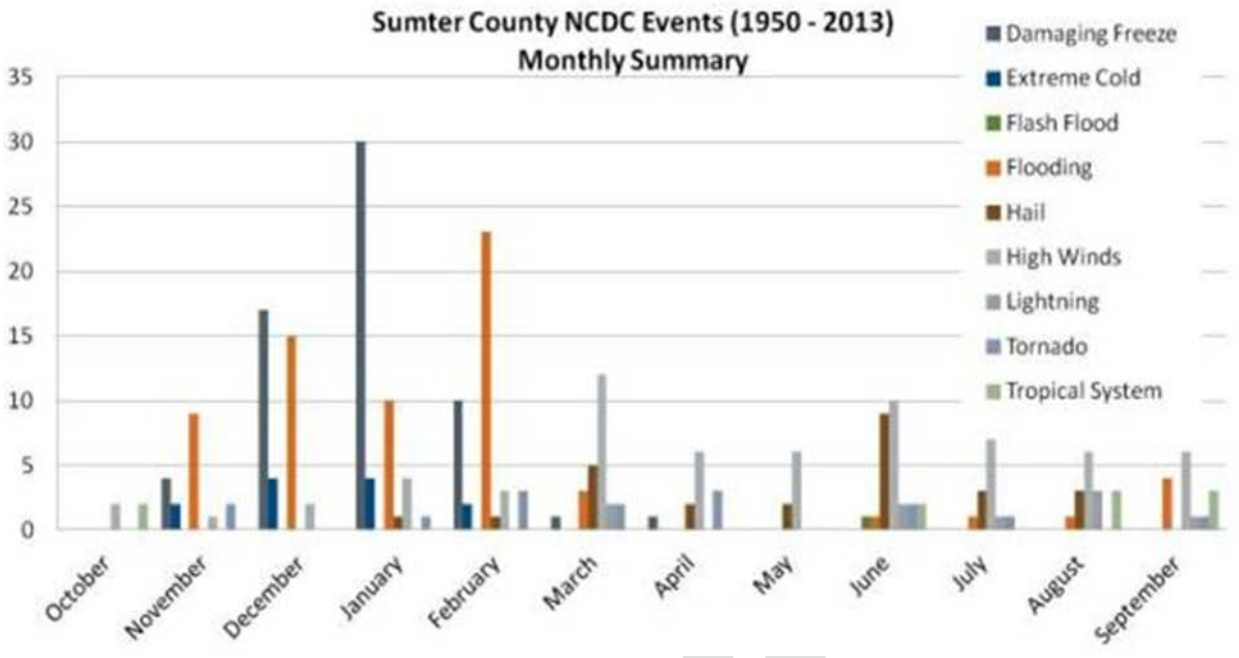


Figure 7 **Distribution of NCDC Storm Events by Month for Sumter County**

Figure 7 above shows the monthly total hazard events from 1950-2013. In order to compare the storm events data, an Microsoft Excel macro was utilized to process the data to account for inflation, standardization of hazard event types, normalization of zone reported events, and annualizing events and damages for Sumter County. After processing the data, there were 270 storm events listed for Sumter County (

Table). Similar to the FEMA declared disasters, most of the records are related to flooding, high winds, and damaging freeze.

Table 17

NCDC Number of Storm Events for Sumter County

Hazard	Years of Record	Number of Events
Damaging Freeze	21	65
Extreme Cold	21	12
Flash Flood	21	1
Flooding	21	67
Hail	59	26
High Winds	59	65
Lightning	21	9
Tornado	64	15
Tropical System	21	10
Total	**64**	**270**

The Storm Events data was annualized in order to compare the hazards to each other. This was completed by taking the parameter of interest (i.e., number of events) and dividing by the length of record for each hazard. The annualized value should only be utilized as an estimate of what can be expected in a given year. Events and property damages were annualized in this fashion. Table shows the total number of annualized events in Sumter County. These estimates are believed to be an underrepresentation of actual experienced loss due to unreported events that are difficult to quantify and are not likely to appear in the NCDC database.

Table 18

NCDC Annualized Storm Events for Sumter County

Hazard Type	Annualized Events	Years between Events (Annualized Events)
Damaging Freeze	3.10	0.32
Extreme Cold	0.57	1.75
Flash Flood	0.05	21.00
Flooding	3.19	0.31
Hail	0.44	2.27
High Winds	1.10	0.91
Lightning	0.43	2.33
Tornado	0.23	4.27
Tropical System	0.48	2.10

3.3 Hazard Specific Vulnerability Assessments

Hazard-Specific Datasets

Hazard-specific analysis is often the most challenging and time-consuming segment of the risk assessment. The level and type of analysis that can be completed is dependent on the type of data available for analysis. Critical facility and infrastructure data has been described above. To determine hazard specific risk, data needs to be available for analysis. The majority of the hazards affecting Sumter County do not have definitive impact boundaries; consequently, past occurrences were used to identify probable locations where these events may happen in the future. Table 19 provides a breakdown by hazard of the datasets used for analysis and mapping in the hazard-specific sections that follow. The available datasets illustrate the difficult nature of quantitatively assessing vulnerability and risk within the County.

The 2013 State of Florida Enhanced Hazard Mitigation Plan and the 2010 Sumter County Hazard Mitigation Plan were reviewed and relevant information was extracted and included in this plan.

Table 19

Hazard-Specific Data Utilized for Analysis and Mapping.

Hazard	Dataset	Source
Flooding	Digital Flood Insurance Rate Maps (DFIRMs) National Flood Insurance Program (NFIP) Policy & Claims Repetitive & Severe Loss Properties Hazus-MH Average Annualized Loss (AAL) data	FEMA FEMA NFIP NCDC Storm Events Database FEMA HAZUS-MH
Severe Storm including thunderstorm, wind, lightning and hail	NCDC Storm Events	NCDC Storm Events Database SVRGIS
Tropical Systems/Hurricanes	Hurricane Tracks	NWS National Hurricane Center
Tornado	NCDC Storm Events for Tornado Tornado Tracks and Touchdowns	NCDC Storm Events Database SVRGIS
Drought	U.S. Drought Monitor NCDC Storm Events for Drought	NCDC Storm Events Database U.S. Drought Monitor
Hard Freezes	NCDC Storm Events for Freezes	NCDC Storm Events Database
Sinkholes	Subsidence incident reports Sinkhole Type, Development and Distribution in Florida Engineering Aspects of Karst	Florida Department of Environmental Protection (FDEP) – Florida Geological Survey (FGS) http://www.dep.state.fl.us United States Geological Survey (USGS) National Atlas
Wildfire	Wildland Urban Interface Wildfire Protection Plan	SILVIS Lab Sumter County Development Service
Earthquake	Significant US Earthquakes Peak Ground Acceleration Annualized Loss Estimates	USGS Earthquake Hazard Program via National Atlas

Section 4. Natural Hazard Profiles

4.1 Flood

Table 20

Floods

Flood	
Description	Floods are one of the most common hazards in the United States. Flooding is defined as a general and temporary condition of partial or complete inundation of normally dry land areas. Floods can originate as overflow from inland or tidal waters, or the rapid accumulation of heavy rains that cause runoff of surface waters. Land susceptible to being inundated by flood waters is a floodplain. Typically, floods are long-term events that may last for several days. The primary types of flooding found in Sumter County include riverine, areal, and lacustrine flooding. • **Riverine** flooding is a function of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. • **Areal** flooding occurs where development has obstructed the natural flow of water and decreased the ability of natural groundcover to absorb and retain surface water runoff. • **Lacustrine** flooding occurs when lakes or ponds overflow onto land. • **Flash floods** result from heavy or excessive precipitation within a short period, typically less than 6 hours. They can develop quickly without any warning or seemingly excessive rainfall. Flash flooding events can occur from intense storms, or from a dam or levee failure. For Sumter County, an event would most likely be caused by slow-moving thunderstorms in a local area or by heavy rains associated with hurricanes and tropical storms.
Geographic Location	Areal or closed basin flooding in low areas is associated with the many small lakes, ponds, and sub-basins located throughout the County. Riverine flooding can occur in areas adjacent to the Withlacoochee River, the Little Withlacoochee River and Lake Panasoffkee. Flash floods can occur more commonly in heavily developed areas where much of the ground is covered by impervious surfaces. *See the section titled Geographic Location for further information.*
Previous Occurrence	There have been a number of past flooding events throughout the County, ranging widely in terms of location, magnitude, and impact. The most frequent flooding events are localized in nature, resulting from heavy rains in a short period over heavily developed areas that are not able to accommodate storm water runoff. Significant Flood events within the past 20 years:

<table>
<tr><td></td><td colspan="3">

September 2, 1995: Three to six inches of rain caused localized street flooding in a band from Wildwood in Sumter County southwest to Brooksville in Hernando County and continued south and east to Dade City in eastern Pasco County. A few stalled vehicles and low-lying mobile homes received water damage.
November 13, 1997: Four to six inches of rain produced localized flooding of roads and low-lying areas from Brooksville to Inverness to Homosassa Springs.
February 18, 1998: Heavy rainfall of two to four inches caused localized street flooding from Port Richey in Pasco County northeast to Bushnell in Sumter County. Several vehicles incurred water damage from standing water at low-lying intersections.
July 4, 1998: Heavy rainfall of up to four inches in less than an hour caused localized flooding of low-lying areas between Wildwood and Bushnell. A few vehicles incurred water damage along U.S. Highway 301 in Wildwood from the heavy rain.
June 22, 2002: Wildwood City officials reported Four inches of rain in one hour. Flash flooding shut down U.S. Highway 301 and a two-block area near the Wildwood shopping center.
June 6, 2012: Tropical Storm Debby produces heavy rain with over 6 inches measured across the county. The highest storm total reported was at Bushnell with 10.89 inches. The heavy rain led to several flooded homes in Lake Panasoffkee, as well as sinkholes in Lake Panasoffkee and The Villages.

See the section titled Additional Information for other descriptions, impacts, and occurrences.
</td></tr>
<tr><td>Probability of Future Occurrence</td><td colspan="3">Floods are often measured in terms of their magnitude and the statistical probability that they will occur. The 1% annual chance (100-year flood) is a regulatory standard used by Federal agencies, States, and NFIP-participating communities to administer and enforce floodplain management programs. The 100-year flood is used by the NFIP as the basis for flood insurance requirements nationwide. The main recurrence intervals used on FIRMs are shown in Table 20. Based on historical records from NCDC and the NFIP, the county can expect to experience one to three significant flooding events in any given year.</td></tr>
<tr><td>Impacts</td><td></td><td>Public and First Responders</td><td>

Risk of injury and loss of life
Public at risk of inundation and damage or loss of homes and property; displacement and relocation
Exposure to contaminated water and wastewater
Risk of unsafe responder operations in contaminated water and

</td></tr>
</table>

			debris • Flooded access and transportation routes could limit the capability of timely response • Responders at risk for elevated stress levels
		Continuity of Operations and Program Operations	• Employees may have difficulty reporting for work • Interruption in operations if the agency is flooded.
		Property, Facilities, and Infrastructure	• flooded transportation routes disruption of power • contaminated water and wastewater • low impact to critical facilities as very few are in a flood prone area
		Delivery of Services	• Moderate risk to delivery of services due to flooded transportation routes • School bus operations may be affected • Postal delivery may be interrupted.
		Public Confidence	Impacts on public confidence will be: • access to 911 roads that are private • sand bags • expectation of immediate mitigation efforts • no wake zones along the river communities
		Economic Condition	• Increased insurance rates • Risk to those uninsured • Ecotourism impact to Lake Panasoffkee bass fishing • Loss of crops and nurseries
		Environment	• Contaminated and backed up water and sewage • Runoff of chemicals from impervious surfaces • Fertilizer and Pesticide

			runoff from manicured lawns and golf courses • Increase in arboviral vectors • Loss of vegetation from prolonged inundation
Extent	The extents of flooding impacts are based on a countywide scale. Due to the large sprawling geography of the county, areas with high population densities are dispersed such that a localized event is not likely to affect the entire county at once.		
Vulnerability	Population vulnerability for flood hazards is calculated in the Florida State Hazard Mitigation Plan using spatial analysis of 2010 U.S. Census population data and the FEMA flood maps. According to that analysis, 44,982 people are vulnerable to the 100-year flood hazard and 3,141 additional people are at risk for the 500-year flood in Sumter County. Critical Facilities and Infrastructure: The risk of flooding to structures was estimated based on best available data for floodplains (FEMA DFIRM) and critical facilities. GIS data for critical facilities was intersected with the FEMA floodplains to determine the facilities that fall within each flood hazard area. Building value and contents value were not available for analysis of at-risk building values and potential annualized losses. Table 21 shows that three of the County's 144 critical facilities are within the 100-year floodplain.		

Additional Information

Withlacoochee River

The 157-mile Withlacoochee River begins in the Green Swamp east of Polk City in Polk County. At the headwaters in the swamp, the Withlacoochee flows west, forming Sumter County's border with Polk County. The river flows into Pasco County where it turns and flows to the north through Hernando County and eventually forms Sumter County's boundary with Hernando and Citrus Counties. The river turns northwest in Citrus County and empties into the Gulf of Mexico at Yankeetown. There are no urbanized areas along the river in Sumter County.

Little Withlacoochee River

The Little Withlacoochee River is a stream that also begins in the Green Swamp flowing northwest becoming part of the boundary for Sumter and Hernando Counties. It flows into the Withlacoochee River just before entering Silver Lake in Hernando. Croom-a-Coochee is a community in Sumter County with several hundred homes susceptible to flooding along this river.

Lake Panasoffkee

Sumter County's largest lake, Lake Panasoffkee, is part of the Withlacoochee Watershed located in west central Sumter. It drains a watershed encompassing about 63,000 acres. One of the state's oldest lakes, it is the third largest of approximately

1,800 lakes in west-central Florida. Depending on rainfall, the lake's surface area ranges from about 3,800 to 4,500 acres. It is relatively shallow, and wetland vegetation dominates the shoreline, providing habitat for fish and wildlife. The community of Lake Panasoffkee consists of more than 4,000 residents on the lake's western shore and is prone to flooding. Figure 8 shows the location of these parcels located west of Lake Panasoffkee.

Figure 8 **Developed Parcel along Lake Panasoffkee**

The 2010 Sumter County Mitigation Strategy noted the following areas within the County that are vulnerable to flooding. These include:

County Road 470(CR - 470) – This road has previously flooded during hurricane incidents. CR - 470 is within a populated, but unincorporated area of the County called Lake Panasoffkee. It is the main route for residents of this area traveling to Bushnell or I-75.

County Road 48 (CR – 48) - Southeast of Bushnell – This road has previously flooded during hurricane incidents but has not flooded for approximately 24 years. Local sources state that the County has fixed the drainage problems affecting the roadway segment. However, citizens and officials agree that it will not be known if the drainage problems are solved until another storm occurs. This roadway segment is significant in that it provides a major transportation route to Bushnell and I-75 for residents living in the Webster and Center Hill areas.

Little Withlacoochee River, southern part of the county – This River floods during 100 year flood events and have the ability to rise very rapidly (up to 8 feet in one day). It has a "backwater effect," meaning that it does not drain back out once the river recedes back into its bank after a storm. The backwaters spill into a somewhat populated area known as Croom-a-Coochee, which lies on the north side of the Little Withlacoochee River. The southern bank of the river is in Hernando County and the area that floods is known as Ridge Manor. The best indicator of flood conditions is the Southwest Florida Water Management District (SWFWMD) report of the Croom gauge on the Withlacoochee River with a flood stage at 9 feet.

Rutland – This is a newly developing community is being built on land that was once part of several farms. Flood issues in this area relate to flooding of the roads that provide access in and out of the area.

North of Coleman/South edge of Wildwood – These are areas with poor drainage, flat topography, and high water table. They are not highly populated, but could pose potential impacts if developed under their current industrial land use designation.

Big Prairie Canal – This canal drains floodwaters that originate in Lake County. It has been the site of repeated efforts to improve drainage in and around the City of Center Hill. Currently the County is undertaking a public works drainage project north of Center Hill using Community Development Block Grant (CDBG) funding from the '97-'98 El Niño Flooding (DR 1195**).**

Panacoochee Retreats – Many of the residential structures in this area are mobile homes that are affected by flooding from nearby Lake Panasoffkee. This area is populated at approximately 4 dwelling units per acre. One of the homes in this area is currently an HMGP acquisition project.

Bushnell – This area experiences minor flooding that does not impede the normal life of the public during heavy rains.

Center Hill – Emory Lane experiences consistent flooding. The City received a grant to help improve flooding issues on this roadway. Currently, two pumps remain at this area at all times.

Coleman – This area experiences minor flooding that does not impede the normal life of the public during heavy rains.

Webster – This area experiences minor flooding that does not impede the normal life of the public during heavy rains.

Wildwood – US Hwy 301 is a major roadway that floods in heavy rains. This causes stress on traffic flows when the road is shut down to two lanes and additional officers are needed to control traffic. Many small back roads flood as well, however, projects are in the works to alleviate many of these problem areas.

Previous Occurrence

The majority of the flood-producing storms that occur in the Withlacoochee Watershed occur in the summer, and are associated with summer rain storms combined with passing tropical systems. While El Niño, the unusually warm ocean temperatures in the Equatorial Pacific, is known to reduce the incidence of hurricanes, it can also increase rainfall in the southern part of the United States. The 1998 El Niño storms caused flooding in the winter across most of West Central Florida, including Sumter County. The 2004 hurricane season produced flooding in the Croom area with the passing of two tropical systems, Frances and Jeanne, in which flood elevation levels reached above the 16-foot mark. The highest recorded floods occurred in the early 1930s when the river rose above 20 feet.

In addition to the NCDC events, the 2010 County HMP noted that the Withlacoochee River in the unincorporated south end of the County has a flood stage of nine feet. The river is at about five feet in normal conditions. When the river reaches eight feet, the County begins flood preparations. In 2003, the river crested and reached 9.66 feet; in 2004, the river crested and reached 11.90 feet.

Impacts

A number of factors contribute to the vulnerability of the floodplain. Development within a floodplain is a critical factor in determining vulnerability to flooding. Additional factors

range from specific characteristics of the floodplain, to characteristics of the structures located within the floodplain. The following is a brief discussion of some of these factors.

- **Flood depth:** The greater the depth of flooding, the higher the potential for significant damages.
- **Flood duration:** The longer duration of time that floodwaters are in contact with building components, such as structural members, interior finishes, and mechanical equipment, the greater the potential for damage.
- **Velocity:** Flowing water exerts forces on the structural members of a building, increasing the likelihood of significant damage.
- **Elevation:** The lowest possible point where floodwaters may enter a structure is the most significant factor contributing to its vulnerability to damage due to flooding.
- **Construction Type:** Certain types of construction are more resistant to the effects of floodwaters than others. Typically, masonry buildings constructed of brick or concrete block are the most resistant to damages. Wood frame structures are more susceptible to damage because the materials used are easily damaged when inundated with water.

Populations and property are extremely vulnerable to flooding. Homes and businesses may suffer extensive damage such as structural collapse from heavy flooding. Floodwaters can carry chemicals, such as pesticides, in the form of runoff from roadways and other impermeable surfaces. Polluted waters and land could also result from flooded agricultural land, factories, and compromised sanitation systems; any property affected by the flood may be contaminated with hazardous materials. In addition, floods may threaten water supplies and quality.

Figure shows the identified flood hazard areas in the county based on the FEMA Digital Flood Insurance Rate Map (DFIRM) data. Sumter County's FIRM was updated and became effective September 27, 2013. The mapped boundaries of the high hazard flood areas are known as Special Flood Hazard Areas (SFHAs).

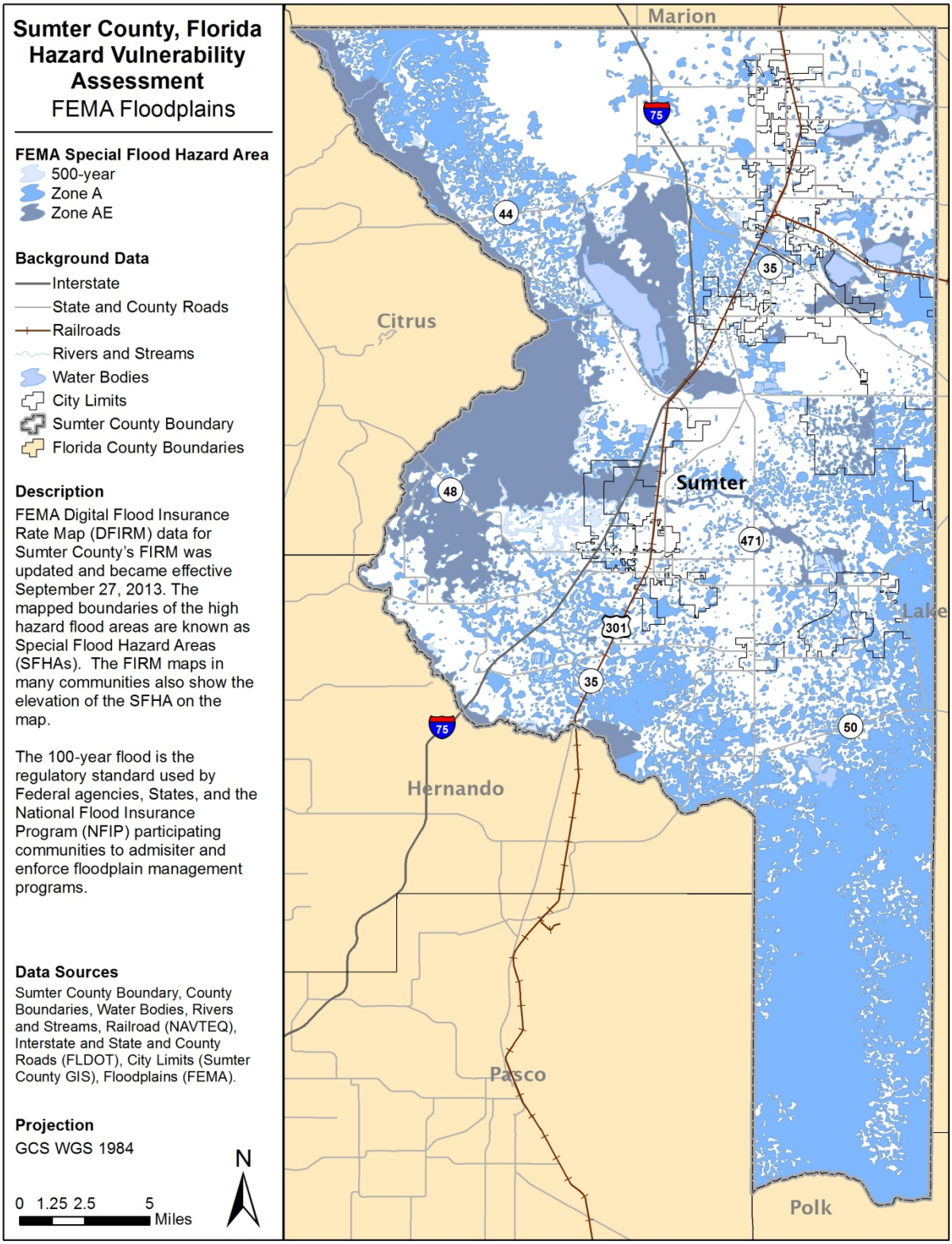


Figure 9 **FEMA Digital Flood Insurance Rate Map (DFIRM)**

Probability of Future Occurrence

Table 21

Annual Probability Based on Flood Recurrence Intervals

Flood Recurrence Interval	Annual Chance of Occurrence
10-year	10.0%
50-year	2.0%
100-year	1.0%
500-year	0.2%

Vulnerability

Table 22

Critical Facilities in FEMA Special Flood Hazard Area.

Facility	Special Flood Hazard Area Zone
WKFL 1170 AM	AE
Critical Communications Tower (5654 CR 634 N)	AE
Critical Communications Tower (14784 CR 757)	A

Table 23 below indicates the amount of acreage (by land use classification) that falls within FEMA designated special flood hazard areas. In additional calculations, it was identified that there are 165,830 acres of open space are within the SFHA. Furthermore, an additional 2,481 acres of open space resides within the Zone X500 where there is a 0.2% annual chance of flooding.

Table 23

Acreage in Special Flood Hazard Area by Land Use

Land Use Category	Count of Parcels (Parcel boundary touches the SFHA)	SFHA Acreage (1% Annual-Chance)
Agricultural	3,554	67,467
Commercial	207	1,635
Government	422	87,159
Industrial	46	106
Institutional	59	783
Miscellaneous	46	574
Non-Agricultural Acreage	393	4,060
Residential	5,005	227
TOTAL	9,732	162,011

4.2 Severe Weather (Thunderstorms, Lightning, High Winds, Hail)

Table 24

Severe Weather

Severe Weather (Thunder Storms, Lightning, High Winds, and Hail)	
Description	A **severe thunderstorm** includes damaging winds greater than 58 mph (50 knots) or greater and hail 1 inch or larger in diameter. High winds have been further broken down into three categories by the NWS Storm Events database: • **High Wind**: Sustained non-convective winds of 35 knots (40 mph) or greater lasting for 1 hour or longer or winds (sustained or gusts) of 50 knots (58 mph) for any duration (or otherwise locally/regionally defined), on a widespread or localized basis. • **Strong Wind**: Non-convective winds gusting less than 50 knots (58 mph), or sustained winds less than 35 knots (40 mph) that resulted in a fatality, injury, or damage. • **Thunderstorm Wind**: Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 50 knots (58 mph), or winds of any speed (non-severe thunderstorm winds below 50 knots) producing a fatality, injury, or damage. Events with maximum sustained winds or wind gusts less than 50 knots (58 mph) should be entered as a Storm Data event only if they result in fatalities, injuries, or serious property damage. • **Hail** is precipitation in the form of ice that occurs in thunderstorms between currents of rising air (updrafts) and currents of descending air (downdrafts). These events typically occur in late spring and early summer. One criteria for severe thunderstorms, as defined by the NWS, is the generation of hail that is 1 inch in diameter (quarter-size) or larger. • **Lightning** is generated by the buildup of charged ions in a thundercloud. When this buildup intersects with the best conducting object or surface on the ground, the result is a discharge of a lightning bolt. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air-cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder.
Geographic Location	Severe thunderstorms can occur anywhere throughout the county and the state. All areas within the county are equally at risk.
Previous Occurrence	Based on NCDC, there have been 65 high wind, 26 hail, and 9 lightning events in Sumter County since 1955; Figure 13 shows the location of hail events and Figure 14 shows the locations of high wind events. Several of the recent events are summarized below: • March 30, 1996: Hail in Bushnell measured 1.5 inches in diameter. • June 12, 2000: Skywarn Spotters reported that windblown dime to nickel sized hail damaged a few vehicles in Bushnell. • December 25, 2006: A line of thunderstorms ahead of a cold front moved across the much of Florida. A utility company storm survey in Webster showed an unanchored and unused mobile home flipped and totally destroyed with the debris field extending in a straight line to the northeast. Large tree limbs brought down power lines in the area. Emergency Management also reported an older mobile home with 1/3 of the home destroyed near Center Hill. At least 100 trees

	were downed during this downburst. • January 19, 2009: A squall line traveling along a cold front moved through the area late in the evening of January 19th, into the early morning hours of January 20th. This fast moving line produced wind gusts of 45 to 55 mph and one tornado-like storm that also produced large hail. Golf ball size hail was reported in Lake Panasoffkee. • June 14, 2011: High pressure was in place across the area. A sea breeze developed near the coast each afternoon and produced isolated severe thunderstorms with large hail and damaging winds. Walnut sized hail was reported in the Village of Belvedere. • July 30, 2012: A weak trough moving across north Florida produced a large area of thunderstorms. A large tree fell on a house, with one person injured inside. A storm survey conducted by Sumter County Emergency Management revealed that the tree roots were rotted and the soil was soaked.		
Impacts		**Public and First Responders**	• Risk of injury and loss of life • Damage risk to homes and property from flying debris in strong winds, lightning strike, and large hail • Risk of unsafe responder operations in severe weather and resulting debris from trees, structures and downed power lines
		Continuity of Operations and Program Operations	• Interruption in operations if the agency experiences a loss of power – no longer than 24 hours
		Property, Facilities, and Infrastructure	• Interrupted electric utilities • Exposure downed power lines • At risk for Lightening damage and potential fire from lightening
		Delivery of Services	• Minor disruption to the delivery of services • Loss of power may briefly impact traffic flow
		Public Confidence	• High risk due to delays in power restoration and the response of multiple first response agencies
		Economic Condition	• Damage to business and industry sector structures from large hail, lightning, or high wind events • Damage to crops and

			nurseries from large hail and fire from lightning • Injury or fatality to livestock from large hail, flying debris, and lightning strike
		Environment	• Contaminated and backed up water and sewage • Runoff of chemicals from impervious surfaces • Fertilizer and Pesticide runoff from manicured lawns and golf courses • Wildfire from lightning strike • Increased saturation of sensitive vegetative areas • Damage to trees and special flora
Probability of Future Occurrence	Determining the probability of future occurrence of severe weather is problematic. Based on previous occurrences, Sumter County is at high risk for future occurrence of severe weather. The genesis of these events has slight variations in seasonality. The winter/spring events are associated with larger cold fronts pushing south across the country while summer/fall events are typically associated with the collision of sea-breeze storms from the Gulf of Mexico and storms moving eastward from the Atlantic Ocean. The spring storms tend to be more severe in nature with longer durations of high winds and more hail spawned from the events. Summer storms are generally less severe due to their shorter duration unless they are associated with a tropical system		
Extent	Similar to flooding, the severe weather hazards of thunderstorms, lightning, hail, and winds, are events that occur frequently, but primarily are localized to small geographies.		
Vulnerability	Risk to critical facilities, infrastructure, buildings, and people cannot be quantified for severe storms as it can be for hazards such as flooding with well-defined recurrence intervals and intensity-damage models. The damages resulting from high winds are directly related to the condition of the exposed structures, their design and construction, and the quality of the building materials. The current building code (2010 Florida Building Code) requires structures to be built to withstand a 140 mph (in a 3 second wind burst) wind event. However, a significant number of structures within the county were built prior to the adoption of the current building code and current standards. Older homes, certain construction materials, mobile homes, and poorly designed homes are more vulnerable to high winds and thunderstorms. Utility lines, communication towers, and transportation networks are impacted by high winds and flying debris. In addition, not all critical facilities have redundant power sources and not all have been wired to accept generators.		

Additional Information

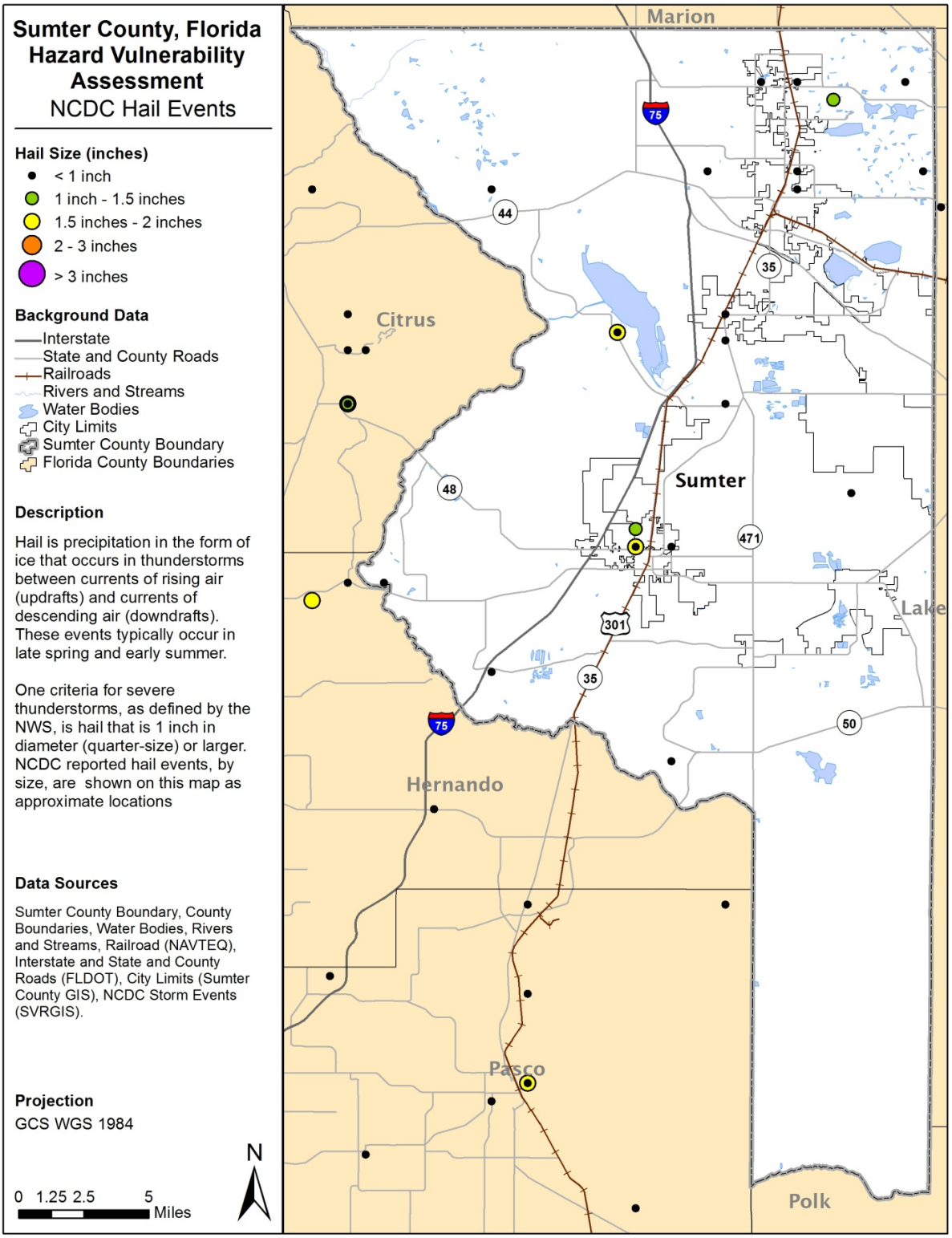


Figure 10 **NCDC Hail Events**

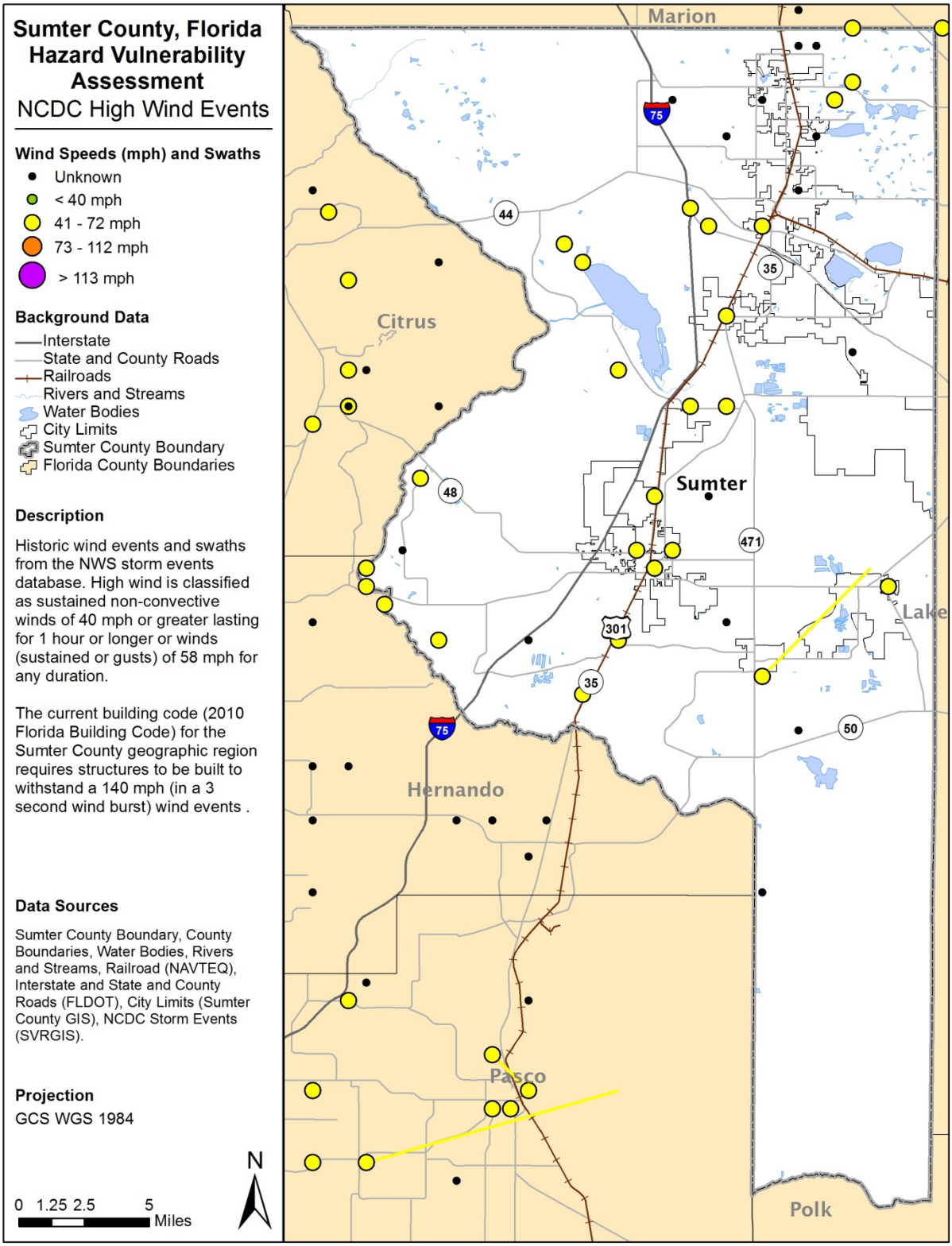


Figure 11 **NCDC Wind Events**

4.3 Tropical Systems and Hurricanes

Table 25

Tropical Systems and Hurricanes

Tropical Systems and Hurricanes			
Description	A **hurricane** is a cyclone defined by closed circulation developing around a low-pressure center in which the wind rotates counterclockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. The following are descriptions of the three levels of development for tropical cyclones: • **Tropical depression**: The formative stages of a tropical cyclone in which the maximum sustained (1-min mean) surface wind is < 38 mph. • **Tropical storm**: A warm core tropical cyclone in which the maximum sustained surface wind (1-min mean) ranges from 39–73 mph. • **Hurricane**: A warm core tropical cyclone in which the maximum sustained surface wind (1-min mean) is at 74 mph or greater.		
Geographic Location	The entire State of Florida is subject to the effects of a hurricane, but some areas are much more vulnerable than others are. This relates to Florida's large area of coastal shorelines on the Atlantic and Gulf Coast. The average diameter of hurricane force winds is easily 100 miles, and tropical storm force winds extend out 300–400 miles, while at the same time no point within Florida is more than 70 miles from the Atlantic Ocean or Gulf of Mexico. Sumter County is located inland, approximately 31 miles from the coast and is not one of the more vulnerable coastal counties.		
Previous Occurrence	As shown Figure 12 many hurricanes have tracked across the county. • September 14, 2001: In Pasco, Hernando, Citrus, and Sumter counties, tropical storm force winds of 40 to 50 mph from Tropical Storm Gabrielle downed numerous trees and damaged several poorly constructed or weathered mobile homes across the four county areas. At least four, separate and distinct, narrow sporadic tornadoes occurred with the outer spiral bands on the east side of Tropical Storm Gabrielle. • June 13, 2006: Peak wind gusts from Tropical Storm Alberto that came from the southwest at 36 knots (41 mph) were recorded at the Automated Weather Observing System (AWOS) station at The Villages (KVVG). Rainfall in Lake Panasoffkee was 1.85 inches. • August 21, 2008: Tropical Storm Fay brought widespread heavy rain of 6-8 inches along the north county line in Sumter. The peak wind gust at the airport at The Villages was 46 mph on August 22. No significant flood or wind damage was reported. Sporadic tree damage brought down several power lines and poles.		
Impacts		**Public and First Responders**	• Risk of injury and fatality • Evacuation of homes • Risk for residential damage • Population displacement

			• Temporary or permanent loss of employment from damage • Responders are at risk of injury or fatality from inclement weather and debris • Responders are personally impacted without knowledge of family and home well-being
		Continuity of Operations and Program Operations	• Risk of being short staffed if employees are delayed in reporting for work • Risk of damage to critical facilities • Damage to power lines and communication lines
		Property, Facilities, and Infrastructure	• High risk of damage from high sustained winds • High risk to electric utilities; downed power lines
		Delivery of Services	• Interruption of services that could last days to weeks • Transportation routes blocked or damage • Schools closed for extended periods for damage or use as shelters
		Public Confidence	• High risk of delayed response by first responders • Public viewing response from Local, State, and Federal agencies as delayed • Lack of strong Public Information Program • Due to Sumter County's location within the State, there is a high risk for competition for media markets to distribute information
		Economic Condition	• High risk with direct impact

			• Loss of small business • Temporary loss of large business with damage • Agri-business loss of livestock and crops
		Environment	• High risk of damage with direct impact • Damage to sensitive wetlands and other areas with sensitive flora • Flooding contamination • Debris from trees, nearby structures
Probability of Future Occurrence	Figure 13 shows the probability for a Category 2 hurricane in Florida, with the extents for the 20, 50, 100 and 300 year return periods. As shown, the northern portion of Sumter County is located within the 100-year return period or 1% annual occurrence, with the southern tip within the 50-year return period. Sumter County is located within the >1000 year return period of a Category 5 hurricane event. Based on the available NCDC data, Sumter County is likely to experience damages resultant form hurricanes approximately every two years.		
Extent	These systems can bring tornadoes, hail, and heavy rains and can move fast (typically higher wind damages) or slow (opportunities for deluge of rainfall). The challenges for emergency management officials may be to host large numbers of evacuees from other areas via the major transportation networks that pass through the community. Similarly, there is a potential for indirect impacts to the local economy if one of these transportation networks is damaged from a hurricane as it could limit the ability of Sumter's commodity exchange. Disruption in transportation systems could also slow or prohibit the flow of response and recovery resources.		
Vulnerability	The damages resulting from tropical systems are directly related to the strength of the system, condition of the exposed structures, their design and construction, and the quality of the building materials. Mobile homes and wood-framed structures are more vulnerable to damage from wind during significant events than steel framed structures. Other factors, such as location, condition and maintenance of trees plays a significant role in determining vulnerability. All critical facilities located within Sumter County are geographically assumed to be uniformly at risk due to hurricane winds.		

Additional Information

Tropical Cyclones help to limit the build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole ward latitudes.

As a developing center moves over warm water, pressure drops (measured in millibars or inches of Mercury) in the center of the storm. As this occurs, the system becomes better organized and the winds begin to rotate around the low pressure, pulling in the warm and moist ocean air. This cycle causes the wind and rain associated with a tropical cyclone. If all of the conditions are, the system could develop into a hurricane potentially generating winds in excess of 155 mph. A storm of this magnitude could be catastrophic if it makes landfall in a populated area(s).

The hurricane season is defined as June 1 through November 30. The earliest hurricane to strike the United States was Alma, which struck northwest Florida on June 9, 1966. The latest hurricane to strike the U. S. was late on November 30, 1925 near Tampa, Florida.

Geographic Location/Previous Occurrences

See Figure 12 below for historical hurricane tracking across Sumter County.

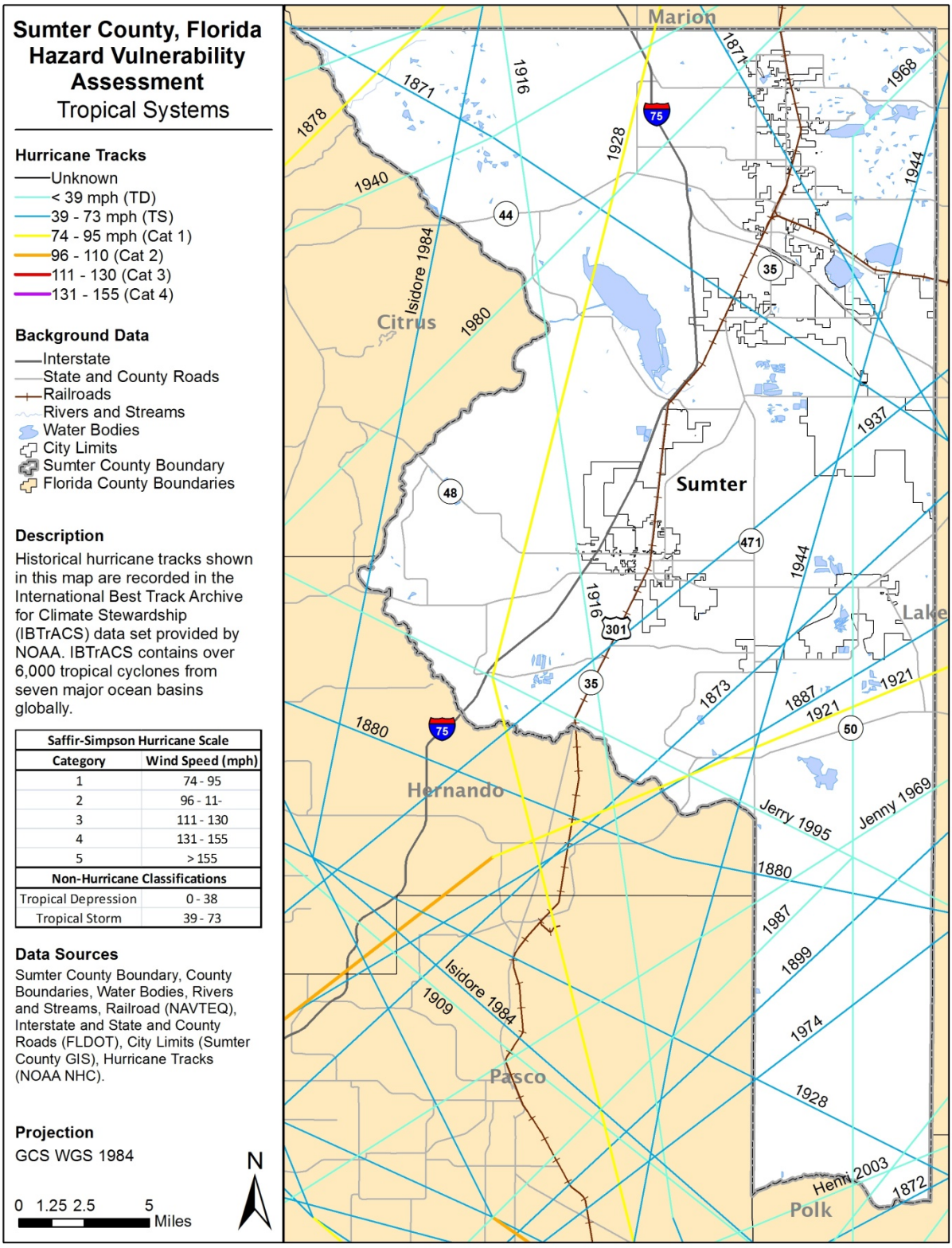


Figure 12 **Historical Hurricane Tracks**

Probability of Future Occurrence

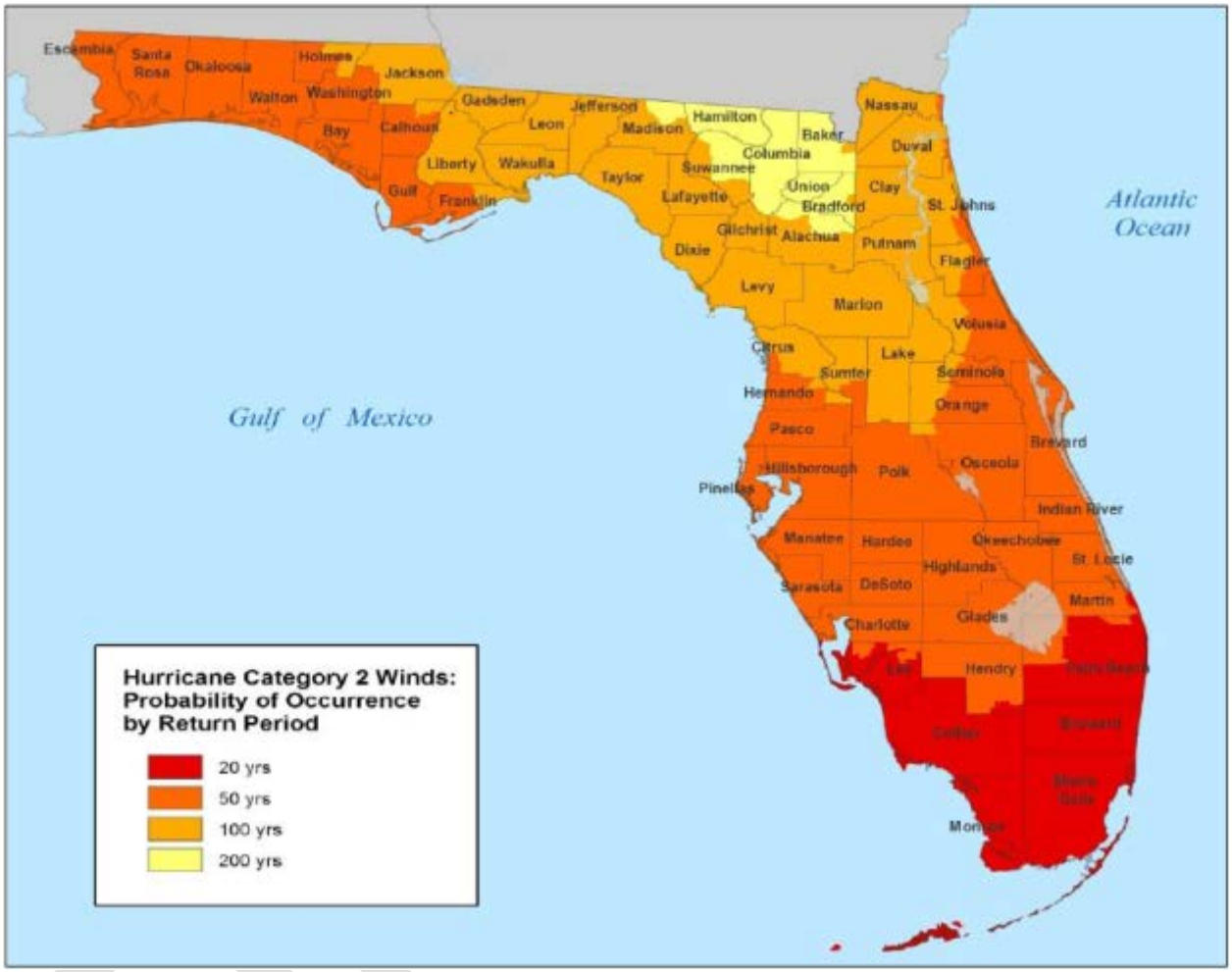


Figure 13 **Hurricane Category 2 Winds: Probability of Occurrence by Return Period**.

Source: 2013 Florida Hazard Mitigation Plan.

4.4 Tornado

Table 26

Tornados

Tornado			
Description	A **tornado** is described as a violently rotating column of air characterized by a long, funnel-shaped cloud extending toward the ground and made visible by condensation and debris. The path width of a tornado is generally less than half of a mile, but can vary from a few hundred yards to dozens of miles. A tornado moves at speeds from 30 to 125 mph, but can generate winds exceeding 300 mph. Tornado season typically lasts from March through August, although one can develop any time of year from a severe storm. The NOAA NWS research of the 1998 and 2007 tornado outbreaks across Central Florida prompted a redefined "peak tornado season" for this region. Findings from this research have also indicated meteorological and climatological factors that result in greater likelihood of violent tornado occurrence at night during the dry season. This is particularly evident during periods of El Niño.		
Geographic Location	Figure 14 shows tornado activity in the United States, Sumter County is within the band of Florida that is known to experience between 6 and 10 tornado events per square mile. Figure # summarizes the location and tracks of previous tornadoes within and around the county.		
Previous Occurrence	• According to NCDC data, Sumter County has experienced approximately 15 reported tornados since 1955. In February 2007, Sumter County experienced the Ground Hogs day tornado outbreak as a trio of storms worked their way across Central Florida from The Villages in Sumter County to New Smyrna Beach. In Sumter County 1,145, homes were destroyed and 200 were significantly damaged. It was the second deadliest tornado in Florida record. *See Figure 16 for a photograph of damages The Villages incurred from the tornado.* • March 30, 2011 a tornado (EF1) was visually seen on the leading edge of a damaging squall line and it snapped softwood pine trees in its path. Downed trees blocked Highway 301 in Sumterville. • April 23, 1997 a tornado (F0) touched down along State Road 44 west of U.S. Highway 301 and damaged up to 24 buildings in the city of Wildwood. The tornado touched down on the Wildwood High School and caused roof and window damage. Numerous trees were uprooted and power lines downed by the tornado before it lifted and dissipated.		
Impacts		**Public and First Responders**	• Risk of injury and fatality to public and responders • Loss of home and long-term displacement • Damage to property • Temporary displacement

			• Responders stress of unknown family situation • Delayed response from blocked response routes • Damage to area leaving it unrecognizable and difficult to maneuver through debris
		Continuity of Operations and Program Operations	• Risk if operations are in the destruction path • Relocation of government operations • Damage to structure • Loss of power • Injury or fatality of employees • Minimal need to implement Continuity of Operations and Government plans
		Property, Facilities, and Infrastructure	• Interrupted electric utilities • Exposure downed power lines • At risk for Lightening damage and potential fire from lightening
		Delivery of Services	• Minor disruption to the delivery of services • Loss of power or debris may briefly impact traffic flow
		Public Confidence	• High risk due to delays in power restoration and the response of multiple first response agencies • Potential for increased media coverage
		Economic Condition	• Damage to business and industry sector structures • Damage to crops and nurseries • Injury or fatality to livestock from flying debris
		Environment	• Heavy damage to flora and sensitive areas is in the path of the tornado
Probability of Future Occurrence	All areas in Sumter County are at equal risk of a tornado occurrence. They can develop at any time of the year but are more frequent during the Spring season. Statistical analysis of historical tornado data, estimates that Sumter		

	County will experience a tornado approximately every 4.3 years, with a slightly increased risk during an El Niño year.
Extent	Sumter County could experience a tornado EF3. While it is likely that some areas in the County would experience a time that is more difficult recovering from the extent of damage and destruction of a tornado, all areas in Sumter County are equally at risk for such an event.
Vulnerability	It is unlikely that any building, as a whole, can withstand the direct impact of a tornado. There are a large number of mobile homes in Sumter County, which are more prone to structural damage than other types of construction. Direct and indirect (flying debris) effects of a tornado could completely destroy these homes. The populations living in these areas are more likely to suffer injury or death from a tornado. Many are also more likely to incur economic hardships, as these are typically areas of low-income and little to no insurance coverage. For these reasons, these areas are the most vulnerable to the impacts of a tornado and recovering from the damage or destruction of a tornado would be extremely difficult.

Additional Information

Table 27

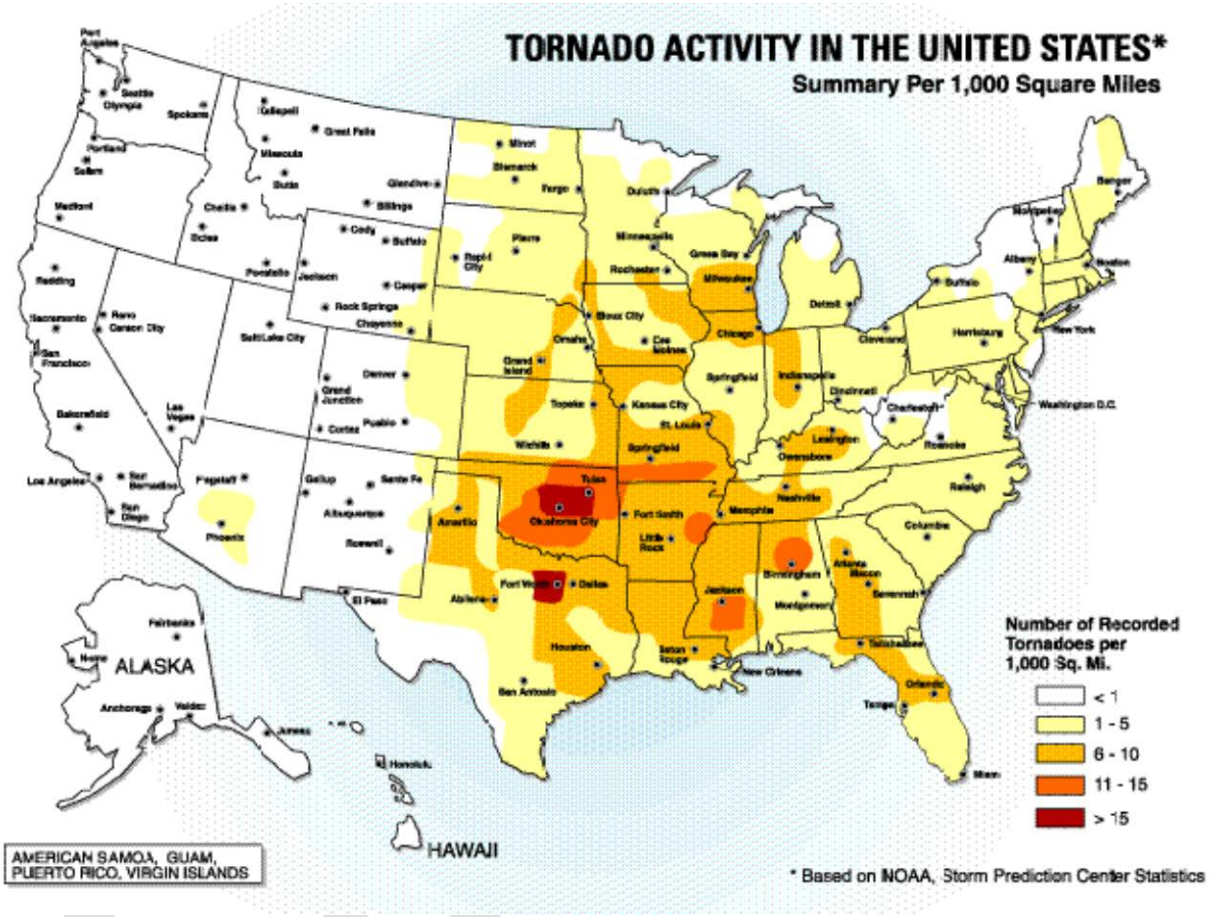
Comparison of Enhanced Fujita Scale and Previously Used Fujita Scale.

Fujita Scale			Enhanced Fujita Scale	
F Number	**Fastest 1/4-mile (mph)**	**3-Second Gust (mph)**	**EF Number**	**3-Second Gust (mph)**
0	40-72	45-78	0	65-85
1	73-112	79-117	1	86-110
2	113-157	118-161	2	111-135
3	158-207	162-209	3	136-165
4	208-260	210-261	4	166-200
5	261-318	262-317	5	Over 200

Geographic Location

Figure 14 **Tornado Activity in the United States.**

Source: American Society of Civil Engineers



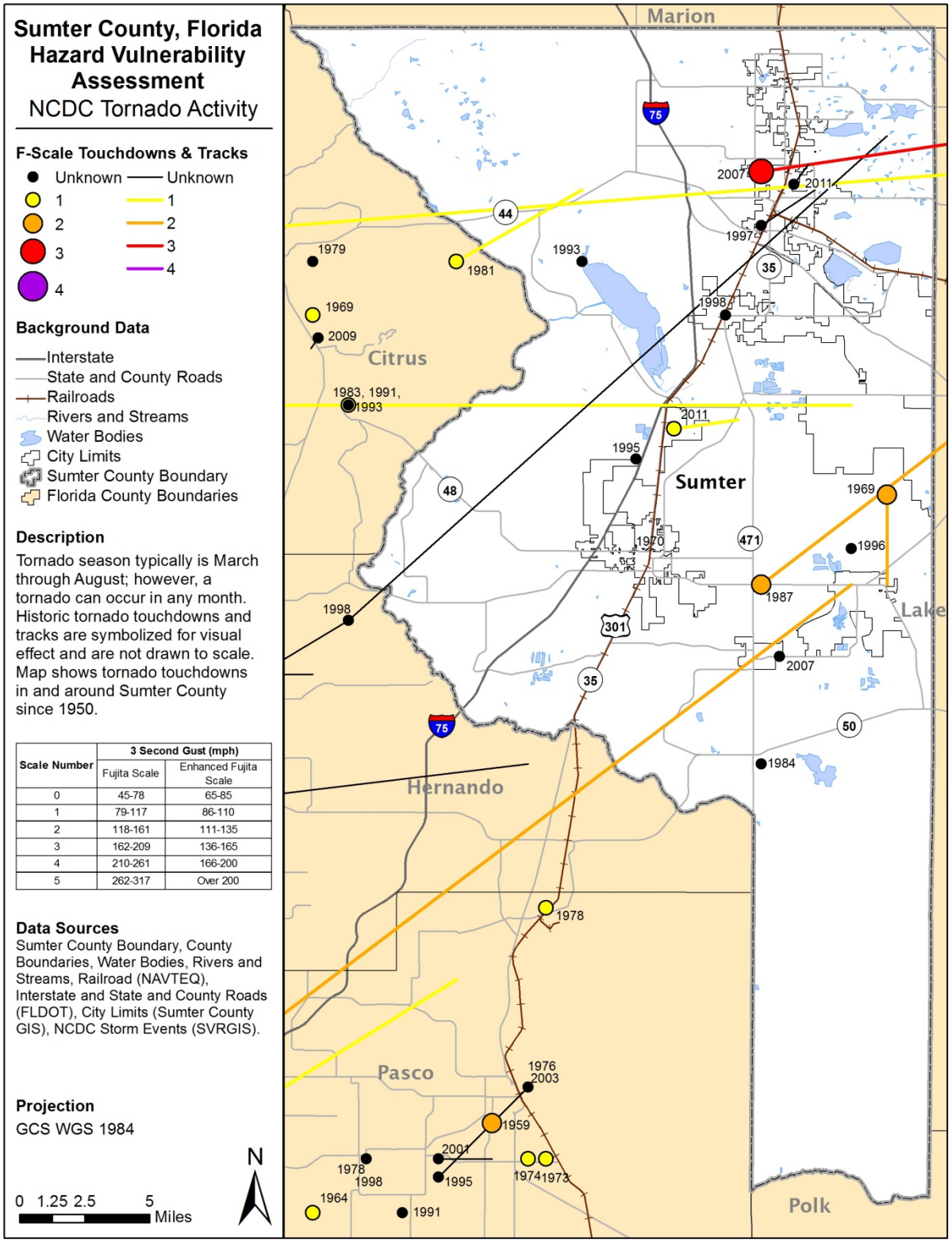


Figure 15 **NCDC Tornado Paths for Sumter County**

Previous Occurrences

Figure 16 **February 5, 2007 Groundhog Day Tornadoes in the Villages.**

Source: www.sumtercountyfl.gov

4.5 Extreme Heat and Drought

Table 28

Extreme Heat and Drought

<table>
<tr><th colspan="4">Extreme Heat and Drought</th></tr>
<tr><td>Description</td><td colspan="3">Extreme heat is a summer phenomenon that usually involves temperatures over 100°F for a period of several days. The NWS can issue heat-related messages to inform citizens of forecasted extreme heat conditions. These messages are based on projected or observed heat index values and include:
Excessive Heat Outlook: When there is a potential for an excessive heat event within three to seven days;
Excessive Heat Watch: When conditions are favorable for an excessive heat event within 12 to 48 hours but some uncertainty exists in regards to occurrence and timing; and
Excessive Heat Warning / Advisory: When an excessive heat event is expected within 36 hours. These messages are usually issued when confidence is high that the event will occur. A warning implies that conditions could pose a threat to life or property, while an advisory is issued for less serious conditions that may cause discomfort or inconvenience, but could still lead to threat to life and property if caution is not taken.
A drought is a period in which an unusual scarcity of rain causes a serious hydrological imbalance in which water supply reservoirs empty, water wells dry up, and crop damage ensues. A prolonged period of drought may or may not accompany the periods of extreme heat.

There are four main classifications of drought. They include:
Meteorological - typically defined by the level of “dryness” when compared to an average, or normal, amount of precipitation over a given period of time.
Agricultural - relate common characteristics of drought to their specific agricultural-related impacts.
Hydrological - directly related to the effect of precipitation shortfalls on surface and groundwater supplies.
Socio-economic - the result of water shortages that limit the ability to supply water-dependent products in the marketplace.</td></tr>
<tr><td>Geographic Location</td><td colspan="3">Geographically, extreme heat and drought can occur locally, regionally, or statewide. For Sumter County, patterns of drought appear to be localized to regional events.</td></tr>
<tr><td>Previous Occurrence</td><td colspan="3">2000-2002: Periods that ranged from abnormally dry to extreme drought.
2006-2008: Experienced periods of moderate drought.
2009-2014: Experienced some periods of abnormally dry to moderate drought conditions.</td></tr>
<tr><td>Impacts</td><td></td><td>Public and First Responders</td><td>Public and Responders at risk for sunburn, heat cramps, heat exhaustion, heat stroke, and death
Water use restrictions</td></tr>
</table>

		Continuity of Operations and Program Operations	• At risk of power loss • Challenging issues such as water loss, restrictions, and loss of pressure
		Property, Facilities, and Infrastructure	• Water loss and restrictions • Power interruptions
		Delivery of Services	• Risk of an energy emergency if the demand for energy to cool exceeds the capability to produce
		Public Confidence	• Challenging water restriction issues for lawn care and golf course care
		Economic Condition	• Agricultural losses such as crops and livestock due to increased heat and reduction in water supplies • Individual and small business at risk of increased energy bills that could affect business overhead as well as individual consumer habits
		Environment	• Chance for increased algae blooms in the lakes • Loss of sensitive vegetation due to lack of water and increased heat • Potential for sinkhole formation with heavy rainfall events
Probability of Future Occurrence	Extreme heat conditions can be difficult to predict. Sumter county can expect several localized heat events per year. Based on historical patterns Sumter County can expect a drought event every 3 to 5 years.		
Extent	The extent of a drought may be gauged by the size of the area affected, the duration, and the degree of moisture deficiency.		
Vulnerability	Risk to critical facilities, infrastructure, buildings and people cannot be easily quantified for extreme temperatures as it can be for hazards with well-defined recurrence intervals and intensity-damage models, such as flooding. As heat increases any infrastructure that is exposed to it over a period of time will begin to deteriorate. Impacts due to drought can range in severity from local water restrictions to widespread water shortages and water emergencies.		

	Direct and cascading impacts include health related impacts in vulnerable populations, reduced crop productivity, increased wildfire occurrences, increased livestock mortality rates, and environmental consequences to habitats. All categories of drought place strain on the agricultural and livestock economy in Sumter County. In addition to water limitations, long-term droughts have the potential to strain power systems and result in decreases in efficiency and capacity.

4.6 Extreme Cold and Hard Freeze

Table 29

Extreme Cold and Hard Freeze

Extreme Cold and Hard Freeze	
Description	• **Wind Chill**: A relatively strong wind that combines with cold conditions and creates the loss of heat from an individual's skin surface. This causes the feel like temperature feel much colder than is actually is. • **Frost:** Frost forms when the air temperature is near freezing (32°F) with calm winds. Frost can damage or kill outside plants and gardens. • **Freeze/ Hard Freeze:** A freeze occurs anytime the temperature falls below freezing for a certain duration of time. A hard freeze can damage crops and can be dangerous to the life of animals or People that are exposed to it for long periods of time.
Geographic Location	Winter storms and freezes can immobilize the entire region. Sumter County, which normally experience mild winters, can experience a cold weather event as a local occurrence or as part of a regional one.
Previous Occurrence	In the past 21 year there have been 65 hard freeze related events recorded by NCDC in Sumter County. • In the early months of 2010, Sumter County experienced temperatures below 20° F with snow flurries that lasted for several days. As a result, there was considerable strain on power sources because of the increase in power use for heat. • In 1989, a cold outbreak and hard freeze affected all 67 counties in Florida. Extensive crop damage was seen including a loss of about 30% of the $1.4 billion citrus crop. Power blackouts hit hundreds of thousands of residents at various times during the event. • Two historic freezes in the mid-1800s devastated citrus crops, which at the time was the main crop of Sumter County's agriculture industry.

Impacts		**Public and First Responders**	• Increased risk of hypothermia, illness, and fatality to those that are of lower socio-economic status, transient, and homeless and lack accessibility to sufficient heat sources
		Continuity of Operations and Program Operations	• Minimal risk to continuity of operations • Temporary power disruption
		Property, Facilities, and Infrastructure	• Temporary power disruption • Frozen water utilities in a hard freeze
		Delivery of Services	• Increase in energy demands for heating may cause temporary power interruptions
		Public Confidence	• Pressure for cold weather shelters and items such as blankets and heaters
		Economic Condition	• Hard freeze increases the risk for crop loss and livestock illness or fatality
		Environment	• A hard freeze will damage or destroy sensitive area vegetation
Probability of Future Occurrence	Extreme temperatures are often unpredictable and may be localized, which makes it difficult to assess the probability. Based on previous events, Sumter County can expect three damaging freezes every year.		
Extent	The extent to which Sumter County could be affected ranges from the local county scale to affects on a regional scale. The County could suffer loss of crop and livestock that could affect the local economy. Regionally, stakeholders outside of Sumter County would lose these commodities that Sumter exports to their areas.		
Vulnerability	Sumter County has a large agricultural base that includes different crops and livestock. If these were exposed, as they have been in past events, there is increased potential for crop loss and loss of livestock. Vulnerable populations in Sumter County would include those of a low socio-economic status that may not be able to afford to run the heat to the capacity necessary to remain warm for the duration of an event. The elderly, small children, pregnant women, and homeless populations could suffer the worst effects of extreme cold, such as, hypothermia and loss of life, if exposed to freezing temperatures for long periods of time.		

4.7 Sinkholes

Table 30

Sinkholes

Sinkholes	
Description	**Land subsidence** is the loss of surface elevation due to a lack or loss of subsurface support. It can include a gradual lowering of the ground-surface elevation over a vast area, and sudden, localized collapses of the ground surface. Land subsidence can be caused by natural and human activities. **Sinkholes** form in carbonate bedrock, such as limestone and dolomite. They are depressions in the landscape resulting from the dissolution of the underlying bedrock. In Florida, there are two primary types of sinkhole that can occur. Human activities that lead to subsidence and sinkhole include underground mining, pumping groundwater or petroleum out of the ground, hydro compaction, and draining organic soils. • **Collapse Sinkhole:** these for quickly and tend to develop in regions where clayey sediment overlays the bedrock. This type occurs when an underlying cavity expands to the point that its ceiling can longer support the weight of the sediment. These collapses are often affected by human activity, especially those that affect the hydrology of an area. • **Solution Sinkhole:** These sinkholes form more slowly and gradually as a result of enlargement of joints by solution. Eventually, the rocks may settle and the cover material washes into the cavern in a process called raveling. These sinks are not as potentially impacted by human activities, as are collapse sinkholes. Most commonly, it is changes in the hydraulic conditions in the aquifer (either natural or man-induced) that lead to raveling and solution sinkhole activation.
Geographic Location	According to the Florida Department of Natural Resources Bureau of Geology, Sumter County is within an area bare or thinly covered with limestone, making sinkholes few. Those that do occur are generally shallow, broad, and develop gradually. The majority of sinkhole events occurs on private property and varies in size from several feet to several hundred feet. As determined by the Florida Department of Natural Resources investigation, sinkhole locations are most prevalent in the north-central portion of the county in the Sumter Upland area west of Oxford and Wildwood and north of Coleman. Sinkhole frequency decreases somewhat south of Coleman and to the east near the Lake Harris Cross Valley. Sinkhole frequency decreases along the Sumter-Lake county line but the average depth of the sinks increase because of the presence of clayey sand overlying the limestone surface. Identifiable sinkholes are least common in the Tsala Apopka Plain, the Western Valley sound of Bushnell and the adjacent marshy/swampy regions of the Lake Upland features *See maps below for sinkhole distribution in Florida and Sumter County*.
Previous Occurrence	Twenty-four sinkhole areas have formed since 1972. Figure 23 highlights the sinkholes incidences gathered by the Florida Geological Survey and the Florida Department of Environmental Protection. Formation dates and event

	descriptions are shown in Table 39.		
Impacts		**Public and First Responders**	• Minimal impact to the public and responders
		Continuity of Operations and Program Operations	• Negligible impact to the continuity of operations
		Property, Facilities, and Infrastructure	• Risk exists if the sinkhole has formed on a road, right of way, under utility lines, or public structure
		Delivery of Services	• Negligible impact to the delivery of services
		Public Confidence	• Risk is low • Minimal potential for increased public and media interest
		Economic Condition	• Low risk to the economy • Risk for increase insurance rate for the personal property owner
		Environment	• Risk of runoff of pesticides and fertilizers into the sinkhole from rains, increasing the chance of soil and underground water contamination
Probability of Future Occurrence	Based on the past events, it can be roughly estimated that Sumter County will experience one sinkhole formation every 1.5 years (or 0.61% annual-chance of occurrence).		
Extent	Sinkhole events in Sumter County that occur are localized events that only have an impact on the property owner or developer.		
Vulnerability	Sumter County's vulnerability is directly related to the make-up of its landscape, as described above, and the location of development throughout the County. As populations increase and the area is more widely developed, the risk to humans and structures increases.		

Additional Information

Figure 17 **Sinkhole Type, Development, and Distribution in Florida.**

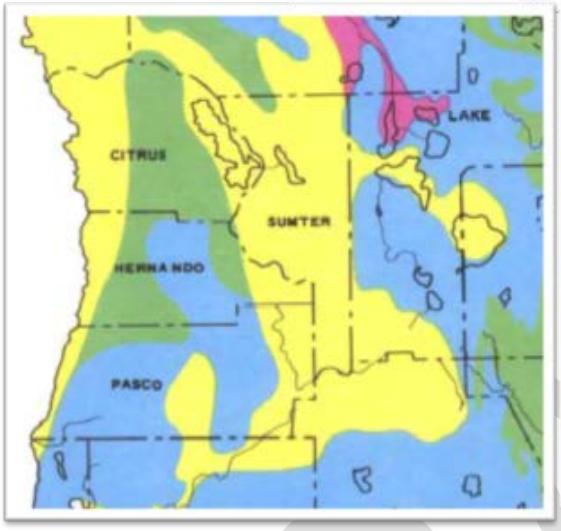
SINKHOLE TYPE, DEVELOPMENT, AND DISTRIBUTION IN FLORIDA

By
William C. Sinclair and J.W. Stewart

Prepared by the
U.S. GEOLOGICAL SURVEY

in cooperation with the
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
BUREAU OF WATER RESOURCES MANAGEMENT
and the
FLORIDA DEPARTMENT OF NATURAL RESOURCES
BUREAU OF GEOLOGY

Tallahassee, Florida
1985



EXPLANATION

AREA I. BARE OR THINLY COVERED LIMESTONE
Sinkholes are few, generally shallow and broad, and develop gradually. Solution sinkholes dominate

AREA II. COVER IS 30 TO 200 FEET THICK
Consists mainly of incohesive and permeable sand. Sinkholes are few, shallow, of small diameter, and develop gradually. Cover-subsidence sinkholes dominate

AREA III. COVER IS 30 TO 200 FEET THICK
Consists mainly of cohesive clayey sediments of low permeability. Sinkholes are most numerous, of varying size, and develop abruptly. Cover-collapse sinkholes dominate

AREA IV. COVER IS MORE THAN 200 FEET THICK
Consists of cohesive sediments interlayered with discontinuous carbonate beds. Sinkholes are very few, but several large diameter, deep sinkholes occur. Cover-collapse sinkholes dominate.

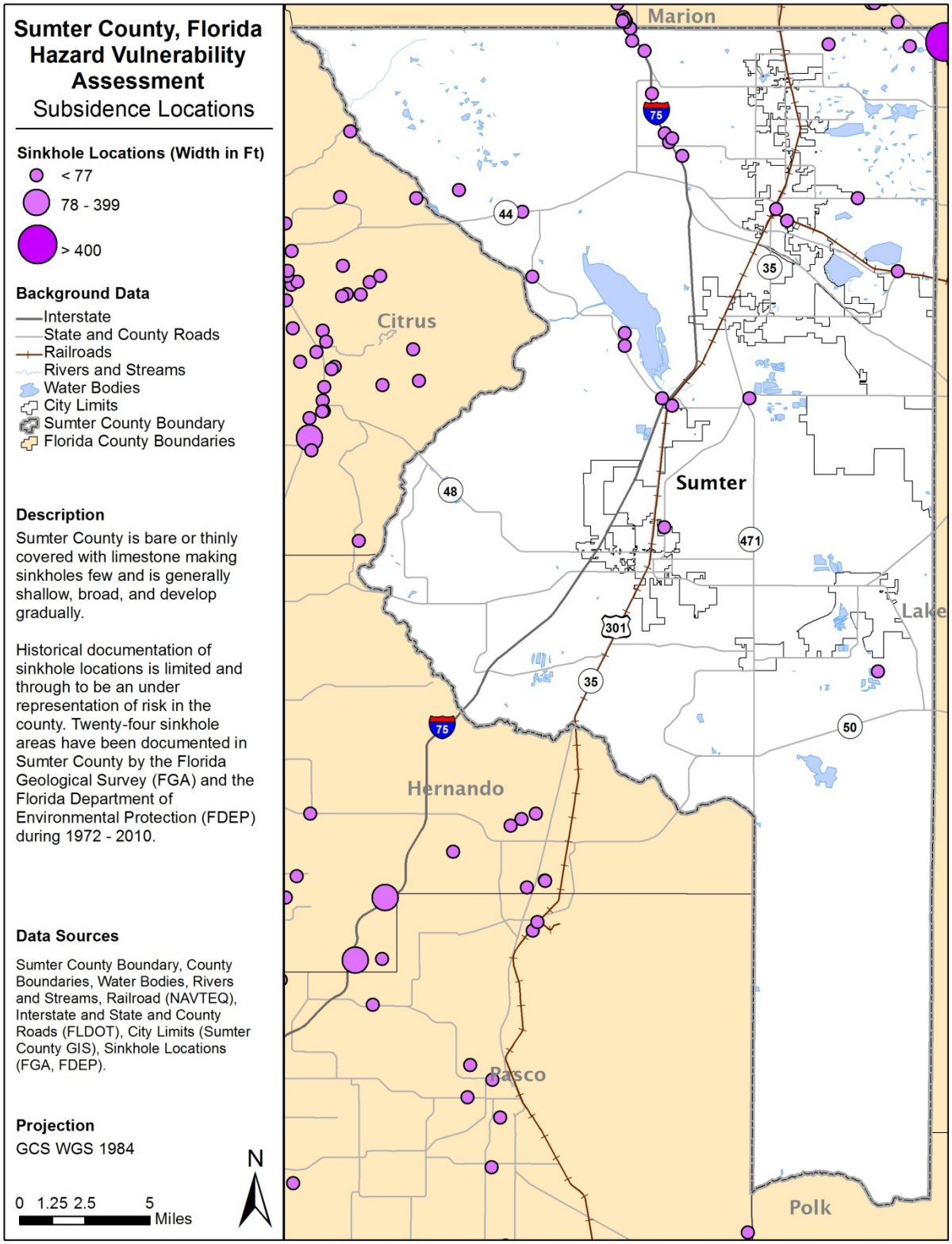


Figure 18 **Sinkhole Locations in Sumter County.**

Previous Occurrences

Table 31

Sinkhole Incidents

Month	Day	Year	SOILTYPE	COMMENTS	ACCESS
December	21	1972	Clay	Located at edge of a large sink near 8-10 other sinks. Within three miles.	Road-93, roadway.
May	0	1974	Sand	Lake Panasoffkee 1/2 mile north.	Road-470, shoulder.
July	19	1974	Sand	Large sink 1/8 mile south.	Road-44, roadway.
August	8	1976	Sand	Near location of 18-1.	Road-I-75, shoulder.
April	27	1981	Unknown	Sinkholes and small lakes in area.	Road- SR 93, ditch bot.
April	7	1980	Unknown	8 small sinks in one square mile.	Unknown.
February	26	1998	Unknown	I-75 northbound. 25,359' north of CR 462, 52' right of outside travel lane.	Unknown.
March	7	1998	Unknown	SR 44. 171' east of CR 468.	Unknown.
February	26	1998	Unknown	I-75 northbound. 924' north of CR 462, 72' right of travel lane.	Unknown.
February	26	1998	Unknown	I-75 northbound. 9284' north of CR 462, 62' right of travel lane.	Unknown.
September	20	2001	Unknown	Not provided	447ft north of Mile Post 331.3 in northbound ditch.
December	26	2001	Unknown	Not provided	350 ft. south of CR 542 in southbound ditch.
November	5	2002	Unknown	Not provided	Sta. 38+75, 23 meters left.
March	27	1980	Unknown	Not provided	Lot 67 & 70. Leisure Time Mobile Home Estates. Lake Panasoffkee
May	8	1985	Sand	Drought conditions at this time.	South of CR 470 and east of CR 465. Lake Panasoffkee.
October	27	1988	Sand	Sinkhole located near 501	Highway 470 near i-75 lake Panasoffkee
February	25	1986	Unknown	Karstic event ---- sinkhole located under house.	2.5 miles west of US-75 on SR-470, on the north side of road. Side of road.
March	1	1988	Unknown	Sinkhole activity verified by an engineer. Damage to residential house $18,926.35.	Lake Panasoffkee area
August	29	1990	Unknown		From Sumter/Citrus Co. line go 0.75 miles east on SR 44. 1.5 mi north on CR 247. Located on 5-acre lot.

Month	Day	Year	SOILTYPE	COMMENTS	ACCESS
March	9	2008	Unknown	12x24x8 ft. sinkhole opened on Buena Vista Blvd. No injuries or impacts to structures. Area blocked off and repair planned.	
August	23	2008	Unknown	20'x8' sinkhole found 3 to 5 feet from roadway. No structures in danger, in front yard of residence, no injuries or road closures.	
November	17	2008	Unknown	12x12 ft. sinkhole on sheriff's annex property. Hole marked for observation.	
May	31	2010	Soil removed exposing bedrock	Sinkhole opened up where a man was standing; man fell into the hole, but was uninjured; no structures or roadways are affected.	The Villages
December	23	2010	Clay	Lime rock collapsed into cavern after blasting taking the life of one man.	SR 50 east of Webster

4.8 Wildfire

Table 32

Wildfire

Wildfire	
Description	**Wildfire**: An unplanned, unwanted Wildland fire including unauthorized human-caused fires, escaped Wildland fire use events, escaped prescribed fire projects, and all other Wildland fires where the objective is to put the fire out. Three main factors influence wildfire behavior – topography, fuel, and weather. Wildfires can be classified as uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures for areas greater than one acre. Fires within forested areas that are ignited by natural causes such as lightning or as part of a controlled burn process are part of the natural fire cycle and an important contributor to forest health.
Geographic Location	The majority of Sumter County is rural agricultural land with approximately 32% (113,049 acres) classified as Conservation, Forest Resources, and Water Management tracts owned and managed by non County agencies and private owners. The largest tracts are those of the East Tract of the Green Swamp and the Richloam and Jumper Creek Tracts of the Withlacoochee State Forest, both largely uninhabited regions, and several tracts owned and managed by the Southwest Florida Water Management District. The Bellville Ranch Conservation Easement is a large private tract located in the County's North West region, as is the Half Moon Wildlife Management Area.

<table>
<tr><td>Previous Occurrence</td><td colspan="3">During 2006 - 2011, a total of 154 wildfires occurred across the county consuming a total of 3,114 acres (Figure 25). However, of these total fires 111 (72%) were controlled at less than 10 acres and 38 (24%) were controlled at less than 100 acres. Only five (4%) fires in the past 5 years have burned in excess of 100 acres.</td></tr>
<tr><td>Impacts</td><td></td><td>Public and First Responders</td><td>• Low risk for public and responders
• High risk of heat stress, injury, burn, smoke inhalation, and rapidly changing conditions, to responders that are active in the response to a wildfire</td></tr>
<tr><td></td><td></td><td>Continuity of Operations and Program Operations</td><td>• Minimal risk to operations</td></tr>
<tr><td></td><td></td><td>Property, Facilities, and Infrastructure</td><td>• Minimal risk to infrastructure
• Small risk to utilities if located near an event</td></tr>
<tr><td></td><td></td><td>Delivery of Services</td><td>• Minimal impact to the delivery of services</td></tr>
<tr><td></td><td></td><td>Public Confidence</td><td>• Minimal impact on public confidence
• Risk of media attention for a larger event</td></tr>
<tr><td></td><td></td><td>Economic Condition</td><td>• Minimal impact on the economy</td></tr>
<tr><td></td><td></td><td>Environment</td><td>• Risk to forests and protected habitats of damage or complete loss</td></tr>
<tr><td>Probability of Future Occurrence</td><td colspan="3">Taking into account previous occurrences and the potential for periods of abnormally dry or drought conditions, and severe weather, Sumter County can expect 5 wildfires per year on average.</td></tr>
<tr><td>Extent</td><td colspan="3">Wildfire events in Sumter County begin as localized events but can quickly and easily expand into countywide or regional events.</td></tr>
<tr><td>Vulnerability</td><td colspan="3">The expansion of the Wildland-Urban Interface (WUI) in recent decades has significant implications for wildfire management and impact. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. The WUI is where wildfire poses the biggest risk to human lives and structures.

As shown in Figure 24, the county is dominated by non-WUI vegetated/agricultural areas with a small portion of WUI Interface surrounding each of the communities within the county.

Many subdivisions were created before standards for emergency ingress and egress were established and may not provide adequate roadways for evacuation or access to burning structures. The difficulty for County planning departments to apply fire-safety regulations to these developments, coupled with the increasing popularity of homes in the WUI has exacerbated the wildland fire risk to these properties.

GIS analysis intersected the locations of the critical facilities with WUI to</td></tr>
</table>

	determine which critical facilities could be at risk in the event of a wildfire. Table 41 summarizes which of these facilities are located within a WUI Zone. The data shows that there are a total of 24 critical facilities in Sumter County located within a WUI zone. Four facilities are located within a medium density interface zone. Population vulnerability for wildfire was calculated in the Florida State Hazard Mitigation Plan using spatial analysis of 2010 U.S. Census population data and the Florida Department of Fire Wildfire Level of Concern (LOC) data. In Sumter County, 1,247 people are considered to live in areas with high vulnerability and 19,442 additional people are considered to live in areas with a medium level vulnerability to wildfire.

Additional Information

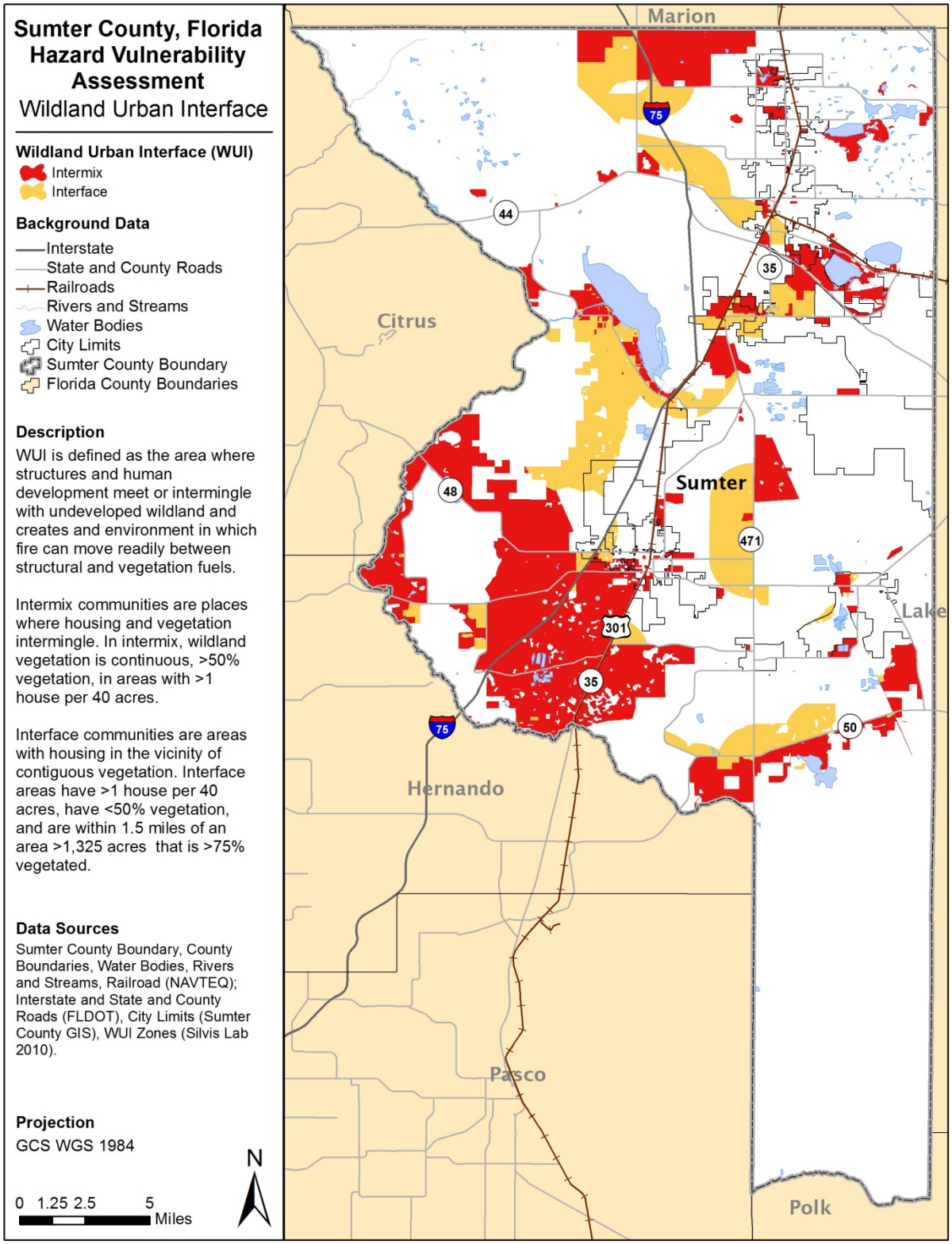


Figure 19 **Wildland Urban Interface.**

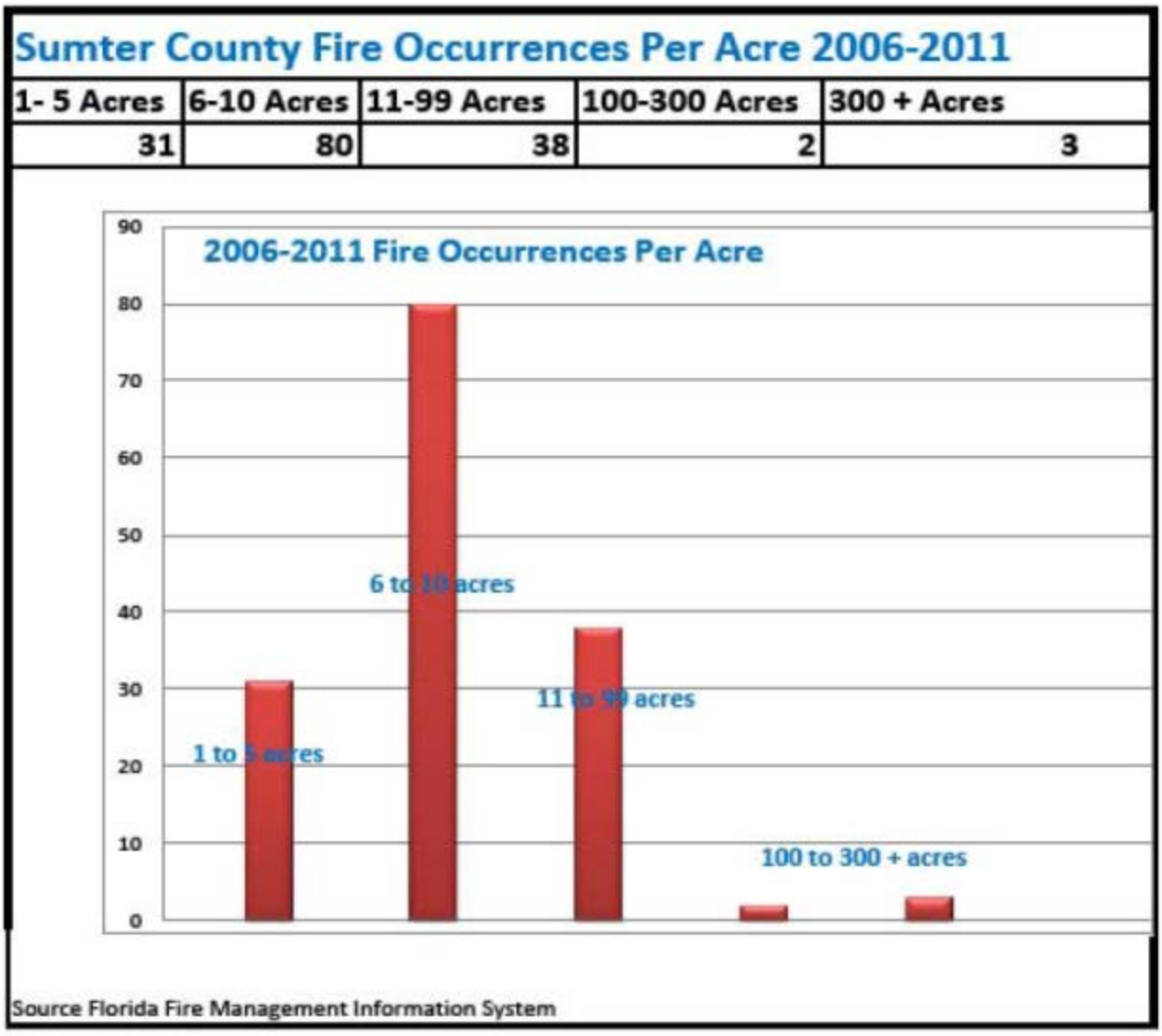


Figure 20 **Wildfire Occurrences 2006 – 2011**.

Source: Sumter County Wildfire Protection Plan

Table 33

Critical Facilities within WUI Zones.

Facility Type	WUI Zone
Magnolia Woods Assisted Living Facility	Low Density Interface
Sumter BTU Central Office	Low Density Interface
Sumter Correctional Institute	Low Density Interface
Lake Panasoffkee Elementary School	Low Density Interface
Panasoffkee Community Library	Low Density Interface

Facility Type	WUI Zone
Sumter County Fire Station #21	Low Density Interface
Wildwood Fire Station #32	Low Density Interface
Sumter County Fair Grounds	Medium Density Interface
Sumter Express	Medium Density Interface
Lake Panasoffkee Water System	Medium Density Interface
Royal Fire Department #34	Medium Density Interface
Critical Communications Tower (14784 CR 757)	Low Density Intermix
Critical Communications Tower (4847 CR 772)	Low Density Intermix
Maranatha Christian Academy	Low Density Intermix
Sumter Christian Academy	Low Density Intermix
Connells Wahoo Airport	Low Density Intermix
Sumter County School District Office	Low Density Intermix
Critical Communications Tower (5654 CR 634 N)	Low Density Intermix
Flying W Air Ranch	Low Density Intermix
Sumterville Water Treatment Plant	Low Density Intermix
City of Coleman Water Authority	Low Density Intermix
Free Flight International	Low Density Intermix
Mission Oaks Assisted Living Facility	Low Density Intermix
S S Avion Ranch Airport	Low Density Intermix

4.9 Earthquake

Table 34

Earthquake

Earthquake	
Description	An **earthquake** is the motion or trembling of the ground produced by sudden displacement of rock in the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area. Most earthquakes are caused by the release of stresses accumulated as a result of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along borders of the Earth's ten tectonic plates. These plate borders generally follow the outlines of the continents, with the North American plate following the continental border with the Pacific Ocean in the west, but following the mid-Atlantic trench in the east. As earthquakes occurring in the mid-Atlantic trench usually pose little danger to humans, the greatest earthquake threat in North America is along the Pacific Coast. Earthquakes are measured in terms of their magnitude and intensity.

	Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude.		
Geographic Location	Sumter County is not located in an area that is prone to earthquakes.		
Previous Occurrence	No earthquakes have been recorded in Sumter County.		
Impacts		**Public and First Responders**	• Negligible
		Continuity of Operations and Program Operations	• Negligible
		Property, Facilities, and Infrastructure	• Negligible
		Delivery of Services	• Negligible
		Public Confidence	• Negligible
		Economic Condition	• Negligible
		Environment	• Negligible
Probability of Future Occurrence	The probability of a future occurrence of an earthquake for Sumter County is extremely low due to the lack of geological features that are needed for an earthquake to occur.		
Extent	During analysis, it was determined that the risk from earthquakes is negligible in Sumter County. This hazard has been profiled but does not contain a risk assessment due to anticipated negligible impact to the county. There is no extent to which an earthquake would impact Sumter County.		

4.10 Pandemic

Table 35

Pandemic

Pandemic	
Description	**Pandemic** is defined as and epidemic that spreads over a wide geographic area and affects an exceptionally high proportion of the population. There are different types of potential pandemic outbreaks. Known pandemics for this area include: • **Pandemic Flu (Influenza)**: influenza viruses have threatened the health of humans and animals worldwide by causing contagious respiratory illnesses, from mild to severe. Annual influenza epidemics create a significant public health burden with the highest risk of complications occurring in the elderly, children under the age of two, and individuals with other medical conditions (especially those impacting the immune system • **Novel Infections**: Infections such as Severe Acute Respiratory Syndrome (SARS) pose a tremendous risk to public health because the general public has no immunity from prior infections or vaccination, and because a vaccine is not readily available. • **Vector-borne Disease**: This term is commonly used to describe an illness caused by an infectious microbe that is transmitted to people

<table>
<tr><td></td><td colspan="2">by blood-sucking arthropods such as mosquitoes, fleas, lice, biting flies, mites and ticks.

• Food and Waterborne Illness: Food and waterborne illnesses are major global health problems resulting in over 2 million deaths per year. Staphylococcus aureus, Salmonella species, E. coli 0157: H7, Campylobacter species, Amebiasis, Hepatitis A, and Shigella species, are examples of this type illness.</td></tr>
<tr><td>Geographic Location</td><td colspan="2">Florida's geographic and demographic characteristics make it particularly vulnerable to importation and spread of infectious diseases, including influenza. The interstate highways bring thousands of tourists to the state every year.</td></tr>
<tr><td>Previous Occurrence</td><td colspan="2">Sumter County Health Department reports on a variety of diseases as required by the state. Based on the latest data available, Sumter County has not had any cases of influenza caused by novel or pandemic strains since 2011.</td></tr>
<tr><td>Impacts</td><td>Public and First Responders</td><td>• Increased risk for illnesses such as influenza, west nile disease and other vector born illnesses, zoonotic illnesses such as hoof and mouth
• Responders are at risk of increased exposure to illness
• If severe enough risk of fatality</td></tr>
<tr><td></td><td>Continuity of Operations and Program Operations</td><td>• Decrease in staffing due to simultaneous illness</td></tr>
<tr><td></td><td>Property, Facilities, and Infrastructure</td><td>• Minimal risk</td></tr>
<tr><td></td><td>Delivery of Services</td><td>• Minimal risk</td></tr>
<tr><td></td><td>Public Confidence</td><td>• Potential risk for widespread panic
• Shortages of vaccines</td></tr>
<tr><td></td><td>Economic Condition</td><td>• Minimal risk</td></tr>
<tr><td></td><td>Environment</td><td>• Low risk</td></tr>
<tr><td>Probability of Future Occurrence</td><td colspan="2">An influenza pandemic occurs when a novel and highly contagious strain of the influenza virus emerges, affecting populations around the world. Historically, influenza pandemics have occurred every 11-39 years. It has been more than 30 years since the last pandemic in the United States</td></tr>
<tr><td>Extent</td><td colspan="2">A pandemic can extend from a local individual household event to a regional and state wide incident. Identifying an incident quickly and containment are key to the extent of which a pandemic can reach.</td></tr>
<tr><td>Vulnerability</td><td colspan="2">Risk for pandemic is generally even across the county; population characteristics would drive differences. For instance, older people have a higher risk of contracting some diseases because of weakened immune systems, and children due to under-developed immune systems.</td></tr>
</table>

4.11 Overall Natural Hazard Prioritization and Methodology

The purpose of the hazard identification and risk assessment is to provide a factual basis for developing mitigation strategies by prioritizing areas most threatened and vulnerable to natural hazards.

Sumter County, after reviewing a number of prioritization methodologies, determined the classifications summarized in Table 48 are most applicable to the county. These descriptions have been applied to the hazards in the previous sections to determine a prioritization for each hazard**.**

Table 36

Hazard Prioritization Parameters

Parameter	Classification/Rank	Description of Classification/Rank				
Probability	High	Annual event [reliably happens every year at least once]				
	Medium	Approximately every 5-10 years [happens every few years]				
	Low	Greater than 20 years [happens rarely]				
Severity	*Consequences*	*Injury/Illness*	*$ Damage or Asset Loss $*	*Down time*	*Extent of Impact*	*Environmental Consequences*
	High	Death/Severe Injury or Illness	>$1M	>2 days	National/State	Major impact to ecosystem
	Medium	Minor Injury/Illness	>$250K, <$1M	4 hours to 2 days	County-wide	Minor impact to ecosystem
	Low	No Injury or Illness	<$250K	<4 hours	Localized	Negligible impact to ecosystem

Table 37

Sumter County Hazard Prioritization

Hazard	Probability	Severity					
		Injury/Illness	$ Damage or Asses Loss	Down time	Extent of Impact	Environmental Consequences	Overall Severity
Flooding	**High**	Death/Severe Injury or Illness	>$250K, <$1M	>2 days	Localized to County-wide	Minor impact to ecosystem	**Medium**
Severe Weather	**High**	Death/Severe Injury or Illness	>$250K, <$1M	>2 days	Localized to County-wide	Minor impact to ecosystem	**Medium**
Tropical Systems/Hurricanes	**Medium**	Death/Severe Injury or Illness	>$250K, <$1M	>2 days	National/State	Minor impact to ecosystem	**Medium**
Tornadoes	**Medium**	Death/Severe Injury or Illness	>$1M	>2 days	Localized to County-wide	Major impact to ecosystem	**High**
Extreme Heat and Drought	**Medium**	Minor Injury/Illness	>$250K, <$1M	4 hours to 2 days	National/State	Major impact to ecosystem	**Medium**
Hard Freezes	**High**	No Injury or Illness	>$250K, <$1M	4 hours to 2 days	County-wide	Major impact to ecosystem	**Medium**
Sinkholes	**Medium**	Minor Injury/Illness	>$250K, <$1M	4 hours to 2 days	Localized	Minor impact to ecosystem	**Low**
Wildfire	**High**	Minor Injury/Illness	>$250K, <$1M	4 hours to 2 days	Localized to County-wide	Major impact to ecosystem	**Medium**
Earthquake	**Low**	Minor Injury/Illness	>$250K, <$1M	>2 days	National/State	Minor impact to ecosystem	**Medium**

Section 5. Technological Hazards

5.1 Hazardous Materials

Table 38

Hazardous Materials

Hazardous Materials			
Description	**Hazardous Material**: any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. Incidents can occur during production, storage, transportation, use, or disposal of hazardous materials Facilities that store hazardous materials are reported to local and federal governments. Security measures at these facilities can be heightened. Many facilities have their own hazardous materials guides and response plans, including transportation companies who transport hazardous materials. Hazardous materials include (but are not limited to): • Explosives • Flammable, non-flammable, and poison gas • Flammable liquids • Flammable, spontaneously combustible, and dangerous when wet solids • Oxidizers and organic peroxides • Poisons and infectious substances • Radioactive materials; and • Corrosive materials		
Geographic Location	Three major highways span Sumter County and intersect in the City of Wildwood, 301, I-75, and the Florida Turnpike. The CSX rail line goes through Sumter County and runs close to communities in areas such as The Cities of Wildwood in the north and Bushnell in the south. A pipe factory that contains hazardous chemicals is located in Wildwood.		
Previous Occurrence	According to the Emergency Response Notification System database, there were six mobile hazardous materials incidents in Sumter County between 2010 and 2014, three of which were reported being discharged from CSX.		
Impacts		**Public and First Responders**	• Injury or fatality is a risk to both the public and responders that are exposed to hazardous material in any manner
		Continuity of Operations and Program Operations	• At risk if an event occurs in a location where the government offices are located
		Property, Facilities, and Infrastructure	• Risk to facilities an property that contain hazardous material and utilities located near

			them
		Delivery of Services	• Risk of interruption of services such as water and wastewater if they become contaminated
		Public Confidence	• Minimal risk
		Economic Condition	• Minimal risk
		Environment	• At risk of contamination and damage if runoff of hazardous materials occurs in environmentally sensitive areas
Probability of Future Occurrence	Accidents and intentional hazardous material incidents are difficult to predict. Future occurrences that are related to other hazard events such as flood or tropical systems can be expected as often as those hazards are predicted to occur, especially so with the known storage of hazardous material throughout industrial business locations within Sumter County.		
Extent	A hazardous material incident can start as a localized event and quickly spread to a countywide or regional event depending on factors such as wind direction and speed, and the chemical make-up of the material.		
Vulnerability	Although these incidents can happen almost anywhere, certain areas of the County are at higher risk, such as near roadways that are frequently used for transporting hazardous materials and locations with industrial facilities that use, store, or dispose of such materials. Areas crossed by railways, waterways, airways, and pipelines also have increased potential for mishaps. Sumter County is the connecting point for 3 major highways and a CSX railroad. While the CSX network helps support economic viability within Sumter County, freight cars often transport hazardous materials that can be a risk for the County. The proximity of the railroad to homes and schools makes them vulnerable to hazardous material spills during a derailment. A 2012 CSX Transportation Hazardous Materials Density Study for the track segments in Sumter County provides a breakdown of the 25 hazardous products that are transported in the greatest bulk. The top five (in order of the greatest number of total carloads) include: Sulfur, molten (10,661 carloads), Alcohols, N.O.S (5,132 carloads), Liquefied Petroleum Gases (1,375 carloads), Sulfuric Acid (1,230 carloads), and Sodium Hydroxide Solution (777 carloads). Sumter County does not have a hazardous material response team and currently relies on mutual aid from Lake, Mary, and Hernando Counties or Orange and Hillsborough Counties for very large events. A group of first responders are currently training, planning, and organizing a hazardous materials response team.		

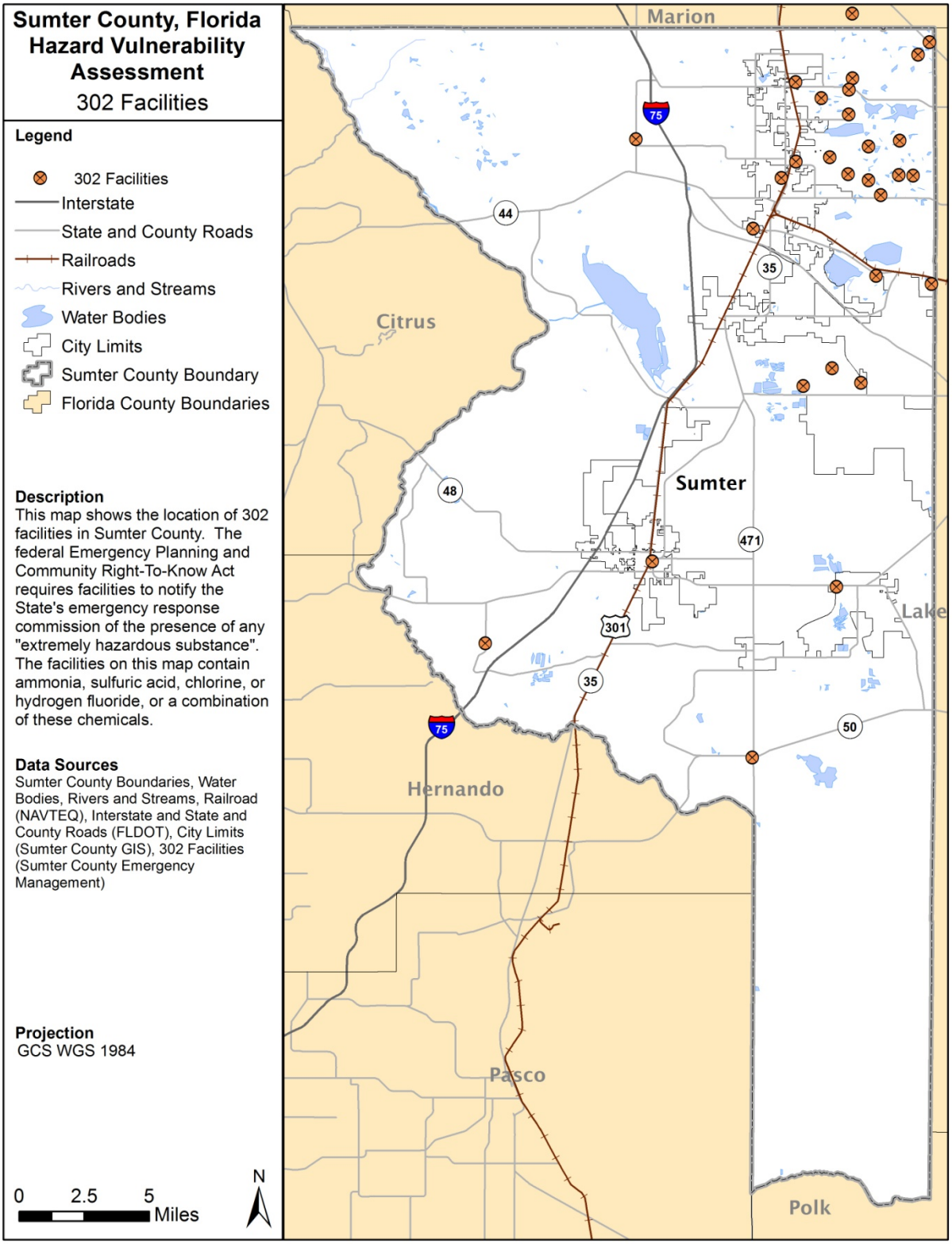


Figure 21 **Sumter County 302 Facilities**

5.2 Utility Distribution

Table 39

Utility Disruption

Utility Disruption			
Description	Critical utilities can include power infrastructure, gas and petroleum pipelines, and water infrastructure. Critical utilities and infrastructure will most likely fail as a result of another identified threat or hazard. For example, high winds from tropical storms or tornadoes can cause power outages. Alternatively, critical utilities and infrastructure can fail accidentally due to system failures. They can also be a target of an intentional act of terrorism. Weather conditions substantially increase the chance of failures		
Geographic Location	Utility disruptions can be widespread, affecting large populations such as the entire County, or be more confined to a specific municipality or neighborhood. Some utility providers have a greater customer base than others and service to disrupted areas may vary. Some provide service for agencies in the county that will be a priority for response in order to assure the continuity of public service for the duration of an event.		
Previous Occurrence			
Impacts		**Public and First Responders**	• Risk to public of power loss, water loss, waste water and water contamination • Responders are at risk if there is a gas disruption or shortage and they need to fuel response vehicles • A disruption in water resources could impact responders fighting fires
		Continuity of Operations and Program Operations	• At risk for the loss of power and resources for fueling vehicles
		Property, Facilities, and Infrastructure	• Risk of power loss in an event • Water restrictions or loss during an event
		Delivery of Services	• High risk with interruption of services for pressure from agencies and the public to get them back online
		Public Confidence	• Challenge of public pressure to restore services quickly • Decisions on which areas need to be

			restored first
		Economic Condition	• Minimal impact for temporary disruption
		Environment	• Minimal impact
Probability of Future Occurrence	Mitigation actions in Sumter County help to reduce the probability of future occurrence. • Continual checks of critical utility systems as well as backup systems are created to keep the systems on line in case of a failure. • Quick response teams who are well trained can reduce the disruption duration. • Redundancies in utility systems allow providers to work together to keep disruption to a minimum. • Hardening of infrastructure related to utility services can also help prevent a utility disruption due to strong winds, floods, and other inclement weather.		
Extent	Disruption in utility service can range from the individual household incident to countywide. In severe regional events, the disruption could expand to a regional or statewide event.		
Vulnerability	A majority of the County, aside from The Villages, has above ground power lines. Moderate storms mixed with high winds and debris can cause outages quickly in these areas.		

5.3 Nuclear Power

Sumter County is located with the 50 mile ingestion pathway of the Crystal River Unit 3 Nuclear Plant (CR3), which has been safely shutdown since September 26, 2009. On February 20, 2013, by letter 3F0213-07, Progress Energy Florida, a subsidiary of Duke Energy, provided certification to the U.S. Nuclear Regulatory Commission (NRC) required by 10 CFR 50.82(a)(1)(i) and (ii) that CR3 has permanently ceased operations and that all fuel has been permanently removed from the reactor vessel.

The Nuclear Regulatory Commission has granted Duke Energy Florida's request to alter the emergency preparedness plan for the Crystal River Unit 3 nuclear power plant in Crystal River, Fla., to reflect the plant's decommissioning status. Any releases beyond the EXCLUSION AREA BOUNDARY (EAB) are limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guide (PAG) exposure levels, as detailed in the EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents." Exposure levels warranting pre-planned emergency preparedness activities are limited to onsite areas.

FEMA and the Florida Division of Emergency Management (FDEM) has acknowledged the shut down of the plant and has forwarded the information to all counties that were located in the 50-mile ingestion pathway; advising that there is no longer a need to pre-plan for such an incident.

Sumter County is not in the 50-mile ingestion pathway of any other Nuclear Power Plant.